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THE FARMER AND PLANTER



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TO OUR FRIENDS.

The publisher is pleased to return his thanks to the many friends who have so nobly interested themselves to increase the subscription list of the *Farmer and Planter*. The daily additions are truly encouraging, and if the present zeal for its welfare is continued, the journal will be placed upon a permanent and profitable foundation before the end of the year. The low price at which the work is published will not admit of our employing special Agents to canvass the State; but, as it is now sent to almost every Post Office, we would request those who now take it, to keep the ball in motion, and continue their exertions to swell the present list of patrons.

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Diseases of Horses:—



VOL. X.

MARCH, 1859.

NO. 3.

R. M. STOKES, }
PROPRIETOR. }

COLUMBIA, S. C.

{ NEW SERIES
Vol. 1, No. 3.

AN ESSAY

ON

Diseases of Domestic Animals, and their Treatment,
To which was awarded the Premium of Twenty Dollars by the State Agricultural Society of South Carolina, at Columbia, October, 1858.

BY J. J. BROYLES, M. D., WILLIAMSTON, S. C.

INTRODUCTORY.

American minds have ever been active in the investigation of science, and from her secret recesses have culled important truths, by which they are daily enriching and farther perfecting the science of human medicine. Much of the brightest talent of American birth has been exerted in the study of human disease; but it is a sad fact, that, while so much labor and research have been directed in this commendable channel, the inferior animals have, comparatively, been left to suffer all the diseases to which they are heir, without a remedy to combat their diseases, or a balm to mitigate their suffering. It is pleasing, however, to know that some able talents have been directed in this praiseworthy direction, and that the subject is beginning to, and soon will, receive that attention it has so long and so justly merited.

The importance of the study of their diseases, and a proper adaptation of remedies thereto, is a matter of such vast importance, not only to the farmer and planter, but to every one who dwells in a civilized country, that it is a matter of astonishment why it should have been so long neglected.

Aside from the deep interest which must be felt in the welfare of domestic animals, pecuniarily considered, there is still another consideration which

should invite our attention to their maladies. We, who, by our superior mental endowments, have been enabled to discover and select, both from the mineral, vegetable, and animal kingdoms, so many remedies which we have learned to apply to diseases in our own person, by which we not only relieve suffering, but even prolong life itself, should feel a sympathy for those animals which, though they suffer diseases, (and, sad to say, of which our own treatment is often the cause,) are not sufficiently endowed by Providence to prescribe for themselves.

The want of speech in those animals cannot form an excuse for our ignorance of their diseases, when we consider how small an amount of our information, at the bed-side of a patient, is gained in this way.

Those sensible symptoms, made known to us through the sense of sight, hearing, and the touch, in most cases more infallible than any desultory history our patients give of their symptoms, are, happily, as well to be found and relied upon in the brute as in our own species.

The expressions of countenance, the act of respiration, the temperature of body, or different parts of the body, the pulse, the discharges from the bowels and bladder, the attitudes and motions, are some of the symptoms by which we are enabled to judge of the nature, seat, and extent of diseases.

The better to understand many of the diseases we intend noticing, it is necessary to state that the almost entire system of an animal is composed of three different systems.

1. *The circulatory system*—composed of a central organ—the heart—with arteries diverging from it, carrying the blood to every portion of the body for the purpose of building up and nourishing the dif-

ferent organs and structures; and veins, which, beginning at the terminations of the arteries, converge and carry the blood back to the heart after it has subserved the purposes of nutrition. This black, venous blood is next sent to the lungs, where, meeting with the air in the act of respiration, is again rendered fit for use—losing its black, venous hue, and becoming again red and nutritious, is sent back to the heart, from whence it starts out as just described.

II. *The absorbent system*—consisting of tubes emanating from every portion of the entire structure, and converging to pour their contents into the circulation. Those arising from the intestines, carry the nutritious portion of the food to be converted into blood, and sent out by the arteries to nourish the different structures of the body; and those arising from all the different tissues, whose office it is to take up all superfluous solids and fluids, which, having served their time in the different parts of the body, have become unfit for further use. Their contents are poured into the circulation, to be cast off by secretions of urine, perspiration, bile, &c., or in the act of respiration. The first are called Lacteals, the second Lymphatics. These vessels, on their way to the heart, are seen to perforate numerous little bodies, (glands,) which, by a certain peculiar vital action, impress on the passing fluid a certain change, which seems to be necessary to befit it for entering the circulation.—The liver, and, in fact, all the glands, are plentifully supplied with these vessels. The two systems—the Lymphatic and Glandular—being mutually dependent on, and intimately connected with each other.

III. *The nervous system*—consisting of minute fibres, emanating from every portion of the body, and uniting into trunks as they approach and enter the spinal marrow and brain, serve the purpose of transmitting sensation to the brain—their centre—and returning therefrom the power of motion.

In this system resides the power of motion and sensation, and every action or change that takes place in the entire animal machine, is under the control of that life-force which resides alone in this system.

Disease, wherever found, must necessarily involve at least one, if no more, of these systems, hence we have—

1st. Diseases of the circulatory system, as Inflammations, Fevers, &c.

2d. Diseases of the lymphatic, or glandular system, as Glanders, Farcy, &c.; and

3d. Diseases of the nervous system, as Epilepsy, Lock-jaw, Spasmodic Colic, &c.

In this order we propose taking up the diseases of domestic animals, beginning with the horse.

DISEASES OF THE CIRCULATORY SYSTEM.

These may be divided into those of a local, and those of a general character.

1. Those of a local character:

Inflammation,

Which is defined to be “a state of altered nutrition, attended with increased vascularity and sensibility, with a tendency to morbid secretion and change of structure.”—*Druitt.*

But it is with the symptoms that we have most to do, which are Heat, Redness, Pain, and Swelling.

The *Heat* of inflammation is apparently greatest as it is farthest from the heart, as the skin, extremities, &c. In internal inflammations, the temperature of the parts inflamed is not perceptibly raised. The heat of inflammation is caused—1st, by an afflux of blood to the parts; and 2d, by a more rapid oxidation of the tissues.

The *Redness* is caused by an increased amount of blood in the part affected. This symptom, however, is not easily detected in animals, unless observed in the mucous membranes; as, in inflammation of the lungs, &c., we have a red nostril.

The *Pain* is caused by an increased size of the part, and a consequent stretching and pressure of the nerves. The pain is acute when seated in the lining membrane of the chest or abdomen. It is throbbing in the skin, and dull and heavy in the bowels, stomach, lungs, &c.

The *Swelling* is caused—1st, by the surcharging of the blood-vessels; 2d, by the effusion of water (serum) in the part; and lastly, by the effusion of matter (pus).

Inflammation has various terminations, to wit:

First. It may terminate in resolution (recovery).

Secondly. It may terminate by the bursting of the over-charged blood-vessels, and the consequent flow of blood (hemorrhage.) Bleeding from the nose, or the bowels, are examples.

Thirdly. By the effusion of serum, as in dropsies.

Fourthly. By the effusion of fibrin (or lymph).—This is the substance that builds up broken or injured parts; a certain degree of inflammation and effusion of fibrin being necessary to the reparation of any injury, as a wound, a fractured bone, &c.

Fifthly. By suppuration—the formation of matter (pus).

Sixthly. By mortification, or the death of the part.

The causes which predispose to, or excite inflammation, are high feeding, over-fatigue, sudden

changes from heat to cold, or from cold to heat, mechanical injuries, &c.

If the inflammation be extensive or severe, it will throw the general circulatory system into excitement, causing general fever. This accompanying fever is called symptomatic, and should be treated together with the local exciting cause—the inflammation.

Treatment.—Bleeding, to unload the surcharged blood-vessels, and abate the general fever, is of the first importance, but the amount of blood taken, and, in fact, the necessity of bleeding at all, will be governed by circumstances. Thus, if vital organs be the seat of disease, as the lungs, bowels, brain, &c., and the accompanying fever be high, the necessity of bleeding would be much greater than if unimportant organs were involved, as the skin, muscles, &c., and there were no fever present.

The amount taken should be regulated, more by the effect produced upon the symptoms present, than by any fixed quantity. The effects upon the pulse should be carefully watched. In the healthy horse, the pulse beats forty-two times to the minute. In the young, the small, compact horse, or in mares, it would probably exceed this average several beats, and, on the contrary, the pulse of the old, or the long, sluggish horse, might be as many under it.

Hence the importance of noting the pulse in health. In inflammation, the pulse is either *hard*, *small* and frequent, or *hard*, *full*, and but little faster. The *hardness*, however, is one of the most significant indications for blood-letting. With the finger upon the pulse, the blood should be permitted to flow until the pulse becomes more *compressible*—*softer*. This effect upon the pulse has an exception, however, in Pneumonia, which will be pointed out in due time.

If the bleeding be pushed too far, the pulse will become intermittent and fluttering, and the horse faint. The average amount of blood drawn, in ordinary cases, in a common-sized horse, will vary from two to four quarts; though much more will often be found necessary to produce the effect.

After bleeding, the bowels should be well opened, by giving *epsom salts*, eight ounces in solution, or *Barbadoes aloes*, four drachms, made into a ball with molasses and flour, and repeated in quarter doses until the bowels are moved. Whenever a purgative is given, the patient should be confined to bran mashes during its operation.

After the bleeding and purging, the fever-powders, Tartar emetic 1½℥, digitalis 1℥, nitre 3℥, should be given thrice per day, until the pulse becomes intermittent—the effect of the digitalis—when

the latter article should be stopped, and the other two continued as long as there is fever. In unskilful hands, however, the digitalis might be omitted from the first.

Of course the diet should be low, and the animal kept comfortably cool throughout the course of the disease.

Where blood can be taken immediately from the inflamed blood-vessels, as from the eye-lid, in inflamed eye, much advantage will be derived from scarifying.

The local application of cold or heat must be governed by circumstances. If the inflammation be near the surface, and not very extensive, we prefer cold water. If it be more deeply seated, and extensive, the warm applications are preferable.—Warm water or bran poultices are the usual vehicles for applying heat. Whichever mode be adopted, should be perseveringly continued to produce effect.

If the pulse again rise in six hours after the first bleeding, we may repeat, carefully noticing the effect produced upon the pulse, as just explained; and even a third, in six hours thereafter, may be called for, but must be performed with the greatest caution.

Fever,

Though rarely found in the horse, without some local disease which acts as its exciting cause, is, nevertheless, sometimes found to exist alone.

Symptoms.—A cold or shivering fit usually precedes the attack. The pulse is quick, with more or less hardness; the breathing hurried; feet and legs cool; the coat staring; loss of appetite, and costiveness. A daily recurrence of the cold stage, succeeded by a hot and then a sweating stage, mark the course of a pure, unmixed case of fever. But this state of things rarely continues long without producing inflammation in some particular organ, as the lungs, bowels, or feet, which, in its turn acts as the cause of the farther continuance of the fever.

Treatment.—This has been detailed when speaking of symptomatic fever in inflammation. When the disease settles in any of the particular organs mentioned above, treat as in diseases of those organs, which see.

Apoplexy

Is caused by a determination of blood to the brain.

Symptoms.—The horse is dull and stupid for a day or two, when he suddenly falls, and either dies, or rises to fall again. In a milder form, called *Me-grims*, (by writers,) the horse will either fall, and rise in a few minutes, or will stop, shake his head unconsciously, and then, suddenly coming to him-

self, will continue his journey. In a third variety—*Stomach Staggers*—caused by over-distention of the stomach with dry food, the horse sleeps almost incessantly for a day or two, when he suddenly falls dead. The veins of the neck and head are always full and tense, and the pupil of the eye dilated, in either variety of Apoplexy.

Treatment.—Bleed copiously from a large orifice, until the indications for stopping, already laid down, are produced. A second, and even a third bleeding should be performed, if the symptoms demanding it reappear. Open the bowels, by giving pulverized aloes 1℥ in 1 pt. gruel—repeating in quarter doses until the bowels are moved. Where the stomach is over-distended, this end may be attained by giving large quantities of soap-suds by injection, repeated until an effect is produced. The fever-powders should next be regularly given, the head kept cold, by the application of cold water; the food should be light, and small in quantity, and no tight throatlatch or collar allowed, for some length of time, as these, together with over-feeding and over-heating, are often the cause of this disease.

Inflammation of the Brain—(Mad Staggers.)

Symptoms.—After being stupid for a day or two, the horse suddenly becomes delirious, looks wild, breathes hard, and tosses himself furiously about.—The causes are the same as those of Apoplexy, and the treatment there recommended should be energetically pursued; but there is very little hope of success.

Pneumonia—(Inflammation of the Lungs.)

Is one of the most obstinate and fatal diseases with which we have to contend in the horse. Considering the importance of the functions of the lungs in health, we are not surprised at the severity of the symptoms.

Symptoms.—After a chill, which usually occurs at the beginning, we have the most distressing and hurried breathing. This heaving respiration is soon followed by *extreme coldness* of the extremities and ears, inability to lie down, and an unwillingness to move; the patient preserving a standing attitude, with the fore-legs stretched apart until near death. The lining membrane of the nostril is *intensely red*, there is more or less cough, and the countenance is expressive of great distress. The bowels are very little affected, but the pulse, as has been referred to, is peculiar, being oppressed—choked, as it were—so as to communicate to the finger a mere vibratory thrill, instead of a distinct pulsation. The course of the disease is so rapid as

to cause death in forty-eight hours. I have seen the lungs of a horse, which had died in this length of time, completely disorganized, and broken down into a black fetid liquid.

Causes.—Exposure to cold, sudden transitions from heat to cold, and *vice versa*. Catarrhal fever, or common cold, may, by an extension of the inflammation to the lungs, produce it.

Treatment.—Bleeding is our chief hope of success in this disease, early and copiously performed, until the pulse becomes fuller, more distinct, and the breathing easier. If in six hours the pulse and breathing demand it, a repetition of the bleeding might be cautiously performed; and even a third, in six hours thereafter, might be risked if a recurrence of the symptoms demanded it. But caution should be observed lest we depress too much.

After bleeding, a dose of salts (8℥), and injections of salty water or soap-suds, to open the bowels, will prove advantageous, though much purging should be avoided in this disease, for fear of inviting the inflammation to the bowels.

Next comes a blister. The common fly-plaster, made soft with turpentine, should be well rubbed on the breast. Commencing in front, it should extend back behind and between the fore legs, reaching half-way up the side. It should be extensive, embracing half the body, if we expect to gain benefit by the application. The rubbing should be repeated, if necessary to blister.

The fever-powders should be given thrice per day while there is fever, and the legs well rubbed with turpentine and tincture of camphor, equal parts, and wrapped in flannel, to preserve warmth. The diet should be light, allowing none at all for the first day or two, but water may be given *ad libitum*.

Catarrhal Fever—(Influenza—Distemper.)

Usually commences by a cold stage, succeeded by fever. A severe cough, and a discharge of thin mucus from the nose, make their appearance early in the disease; the nostril is red, and the eyes watery. Early prostration, and frequency of the pulse, indicate the intensity of the disease. The extremities are generally *cool*, the breathing somewhat affected, and the abdomen “tucked up.”

Causes.—Cold is the usual cause of this disease, though it is often epidemic, and is then more fatal.

Treatment.—If the fever be high, and the patient vigorous, we should bleed, but it should be done early—before the weakness appears. Give a dose of aloes in one pint gruel, to open the bowels; and, while there is high fever, and the pulse frequent—which sometimes rises to 60 or 70°—the

fever-powders should be continued. When prostration comes on, sweet spirits of nitre, 1℥, with 1 pt. boneset, or camomile tea, should take the place of the fever-powders, thrice per day. If extreme weakness and prostration supervene, 1 pt. porter, ale, or toddy, should be given thrice per day, with the sweet spirits of nitre. The throat should be blistered if there be much swelling, which is sometimes the case.

This disease often runs into Pneumonia. When this is the case, it may be known by the *intense redness* of the nostril, *coldness* of the legs, hardness of the breathing, the peculiar oppression of the pulse, but more especially by the *crepitation* in the lungs, which is to be heard by applying the ear to the horse's chest, when a crackling will be heard, while the horse inspires, similar to that produced by "salt on hot embers, or by rubbing a lock of hair between the finger and the thumb." Whenever this crepitation is heard, we may be sure that Pneumonia is at hand, and that our patient will, more than likely, die. When these symptoms appear, blistering largely should be resorted to, as directed in Pneumonia, but, of course, bleeding and other depletion are out of the question in this advanced stage of the disease.

Catarrh,

Or common cold, sometimes affects horses by a discharge from the nose, a slight cough, and, perhaps, more or less fever.

Treatment—If any be necessary, would consist in a fever-powder every night. If there be fever, bleeding and salts would be called for.

Strangles—(Colt Distemper.)

Is a contagious disease, usually attacking young horses, and occurs but once in the same patient.

Symptoms.—Cough precedes a discharge from the nose, and a tumor under the jaw, with more or less fever, and difficulty of swallowing.

Treatment.—If much fever is present, bleed and give the fever-powders—omitting the digitalis—blister the tumor under the jaw, and open it if matter forms. Blowing smoke, or a small quantity of snuff, up the nostril, occasionally, by promoting the discharge, will be of service.

Chronic Cough and Thick Wind.

These diseases are often the consequence of Pneumonia, or Catarrhal fever. They consist in an irritable condition of the membrane lining the air-passages, or a thickening of the same membrane. If the seat of the irritation be in the wind-pipe, cough will be excited by dust, or by coming sud-

denly into a cold air from a warm stable, or by a slight blow on the wind-pipe. If the irritation be seated in the lungs, a full stomach, by its pressure upon them, if the animal be exercised, will excite cough. A thickening of the membrane, by preventing the air from coming readily in contact with the blood, will produce "thick wind." Of course this state of things, by preventing the due oxydation of the blood, will interfere, seriously, with the health of the animal. In fattening a horse, the blood is increased in quantity and quality—becoming richer in fibrin. This increase of blood requires an increase in the respiratory action which is to benefit it for use. In exercise the circulation of blood to the lungs is increased in proportion to the violence of the exercise. When an impediment to the aeration of the blood exists in the lungs, by a thickening of the membrane of the air-cells, we can readily perceive why the fattening process, in such subjects, is so tardy, and why they are incapable of violent exercise.

Treatment.—Such horses should be uniformly treated—fed moderately and regularly—avoiding high feeding or violent exercise. A blister along the under part of the throat, reaching from the jaw to the chest, often repeated, with small doses of fever-powders at night, smearing the trough with tar, and occasionally burning the same under the nose of the horse, are the remedies.

Broken Wind

Consists in a rupture and an enlargement of the air-cells of the lungs, and is incurable.

A bellowsed horse should be moderately and regularly used, and fed with such regularity and moderation, as never to obstruct the breathing by the pressure of a full stomach.

Colic,

Though not an inflammatory disease, will be most conveniently treated of in this connection.

Symptoms.—Pain and swelling of the abdomen, causing the horse to roll and toss himself violently about. These symptoms may suddenly remit, and as suddenly reappear several times in the course of the disease.

Causes.—Draughts of cold water, when the body is heated; improper food, either in quantity or quality; cold, exposure, &c.

Treatment.—1℥ laudanum, 1 pt. brandy toddy, with 2℥ turpentine, given as a drench, will usually effect a speedy cure. Gently rubbing the abdomen, and moderate trotting, are sometimes auxiliaries.—If a cure is not effected in half an hour, the same dose should be repeated, or an ounce of essence of

ginger may be given in half a pt. of water. Four ounces of essence of peppermint, and 1℥ powdered capsicum, or 4℥ pulverized mustard, given in 1 pt. toddy, are also valuable remedies.

After the administration of any of the above remedies, the bowels should be opened, by giving salts or aloes, in gruel, assisted by often-repeated large injections of soap-suds or salty water.

If the disease persist, long bleeding should be performed early in the disease, to prevent the supervention of

Inflammation of the Bowels.

If, in a case of colic, the pulse becomes frequent, hard, and small, the abdomen tender, the nostril red, the extremities cool, &c., inflammation of the bowels has taken place.

Causes.—Same as those of colic.

Treatment.—Bleed until the pulse becomes fuller and less frequent; blister the entire abdomen; give large injections of soap-suds or salty water; keep the legs warm, by rubbing and other means already mentioned; and, if the injections do not move the bowels, a dose of aloes should be given in a pt. of gruel, as a drench; still, however, continuing the injections every few hours.

If the lining membrane of the bowel be the seat of the disease, we have

Diarrhœa.

Symptoms.—Together with the above symptoms, we have frequent watery discharges from the bowels.

Causes.—Improper eating or drinking, as mentioned above; improper articles of food too greedily eaten, especially green food. And although there would be no inflammation present in such cases, at the beginning, yet it is apt to supervene if the case continues long.

Treatment.—Bleed, if fever be present, as directed in the preceding article; after which, give a dose of salts or aloes, to get rid of the offensive matter in the bowels, which is exciting the disease. When the medicine has operated, check the bowels by giving pulverized opium 2℥, cateu, 2℥, chalk 1℥, thrice per day; or, inject 3℥ laudanum in *but one pt.* gruel, and drench with half pt. oak bark tea.

Where the inflammation is severe, and seated low down in the bowels, we have

Dysentery.

Symptoms.—Same as above, except there is more fever; and, instead of the watery discharges of diarrhœa, we have mucus, in shreds or lumps, similar to fat meat streaked with blood.

Treatment.—Same as for diarrhœa, except the bleeding is more highly necessary, and a blister over the abdomen advantageous.

Nephritis. (*Inflammation of the Kidneys.*)

Cystitis. (*Inflammation of the Bladder.*)

The *symptoms* of these two diseases are very much the same, and consist in a hard, small, fast pulse, tenderness of the loins, a straddling and stiffness of the hind legs, and a constant straining to urinate, which is high-colored, scanty, and sometimes bloody.

Treatment.—The treatment for either is that for inflammation in general. Bleed as directed for inflammation; open the bowels by salts and injections; blister the loins with mustard; give 2℥ tartar emetic thrice per day, and allow as much drink as the horse will take, especially flax-seed tea.—Turpentine or fly-plaster, digitalis, or nitre, as formerly used, should not be thought of in this disease, as they would stimulate the kidneys, and thereby add to the mischief.

Worm.

There are two species of worms found in the horse. 1st. The long worm, (*lumbricus teres*) from six to eight inches in length, usually found in the upper part of the bowels. 2d. The short, small worm, (*Asearis*) infesting the lower part of the bowels, and generally in such numbers as to create great irritation about the anus, rubbing the tail, &c. We may guess at the existence of worms, by the horse—though he eat greedily—losing flesh, and his coat appears dead and rough.

Treatment.—For either variety, confine the horse for a few days to bran mash; then give tartar emetic, 2℥, on an empty stomach, and in four hours after, give 1℥ aloes, in gruel; and, if we suspect the small worm, inject 1 pt. sweet oil, with 1℥ mercurial ointment, into the rectum.

Lampas,

Which is the growth of the gum protruding beyond the front teeth, will cause rubbing of the tail, but an inspection will detect the cause, and repeated scarifying the gums, with a sharp knife, will effect a cure.

Bots.

The eggs of the nit fly (*Æstris*) being deposited upon the legs and elsewhere, are nipped off by the horse, and, in a few minutes after being swallowed, hatch; and by inserting their heads deep into the lining membrane of the stomach, remain there till grown. It is said they mature and lose their hold in twelve months, and are passed off by the bowels.

Treatment.—Medicine that will destroy the bot, will also kill the horse; and, in fact, medicine would not reach that part of the stomach in which they are situate: hence the futility of giving anti-bot medicine. It is thought they may remain for years without injury to the horse.

Were I to attempt their expulsion, I would give a pint of molasses and sweet milk, to encourage them, if possible, to lose their hold, and, in a few minutes, give a pint of sage or mullein tea, with 4℥ aloes, to expel them.

Founder of the Feet.

Inflammation of the feet causes great pain, and inability to walk. This is owing to the unyielding nature of the hoof, and the consequent pressure made on the soft parts as they attempt to swell.

Causes.—Suddenly taking the feet from a day's exposure on ice, &c., to a warm stable, and *vice versa*; bruises, by traveling on a hard road, and some diseases, as Pneumonia, Catarrhal fever, &c., often settle in the feet.

Treatment.—General bleeding; bleeding from the toe, by paring it off, blistering the ankles, giving the fever-powders, opening the bowels, and reducing the feed, form the most rational mode of treatment.

Inflammation of the Shoulder. (SWEENEY.)

From sprains, or from rheumatism, the shoulder sometimes becomes inflamed.

Symptoms.—There is lameness, especially in going down hill, but there may be no heat, swelling, or tenderness, owing to the disease being seated so deeply in the muscles of the shoulder.

In standing, the horse places the foot and leg forward, with only the *point* of the *toe* to the ground. In diseases of the foot—with which this is often confounded—the foot, though stretched forward in standing, rests on its entire bottom.

Treatment.—Bleeding is occasionally of service, where there is fever, or the animal vigorous. The application of turpentine, camphor and spts. ammonia, well rubbed in with a hot iron, blisters, often repeated, hot fomentations, a seaton in the shoulder or chest, and rest, are the remedies.

Grease—(Scratches.)

Is an inflammation of the skin of the heel, which soon cracks, and, spreading up to the ankles, causes swelling, and a running of watery serum and matter.

Causes.—The urine and filth of stables, high feeding young horses or poor ones, used to grass only, extreme poverty, exposure of the parts to sudden changes of temperature, &c.

Treatment.—If too sudden a change to high living be the cause, bleed, purge, and reduce the feed. If poverty, improve the keeping, and give a tonic of ginger 2℥, gentian 1℥, twice daily, in bran mash.

If the disease be early observed, after washing with soap and warm water, apply a wash of blue-stone 1℥, water 1 pt., repeated every third day, and keeping the parts well anointed with train oil and tar in the meantime. If the disease be farther advanced, apply burned blue-stone in substance, quick lime, or corrosive sublimate, by dusting it upon the part every third day; or black wash, or yellow wash, are sometimes of service, applied as often—not neglecting the oil and tar to be daily applied in the meantime.

Some horses of a scrofulous habit, are troubled with swelled legs, either with or without grease.—Such horses are often affected with sore eyes, a nasal discharge, and other symptoms that point to a scrofulous taint of the system.

Treatment.—If they be thin in order, give the gentian and ginger, with 1℥ carbonate of iron, twice per day, for some length of time. If the horse be in good order, or has fever, bleed and purge before commencing with the tonic mentioned. If the swelling is extensive, give nitre 2℥, digitalis 1℥, twice per day, which, by increasing the flow of urine, will reduce the swelling. Warm fomentations and hand-rubbing are also useful.

Splint and Spavin.

Splint is a growth of bone, forming a knot on the bone of the leg, usually on the inner side, just below the knees; and *Spavin*, a similar growth on the head of the bone forming the hock joint. The bones themselves are sometimes enlarged. If the disease be near to, or in the joint, there will be lameness.

Causes.—Strains may cause them; hence, horses of small bone and heavy body are apt to have them.

Treatment.—Where the head of the bone itself, forming the joint, is enlarged, I never knew a cure effected. When the disease is at a distance from the joint, by splitting the skin, the bony knot may be easily chipped off with a chisel and mallet; but this is of little use, as the disease is harmless in such places. Frequent hand-rubbing, with iodine ointment, alone, or mixed with mercurial ointment, frequently repeated, blisters upon the part, and inserting a seaton just below the tumor, are the remedies. *Continued rubbing*, with whatever application is preferred, is most to be relied upon.

Wind-galls, Capped Hocks, &c.

Where tendons slide over bone nature has placed little sacks, filled with mucus, to lubricate the parts. By straining and hard usage these inflame, and fill with a surplus of fluid. About the ankles, hock-joint, near the knee, behind the leg, we find these soft, little tumors, which sometimes grow to an inconvenient size.

Treatment—If they are bad enough to treat at all, repeated rubbing, with some stimulating lotion, and a succession of blisters, will take them away for the present, but the same cause will reproduce them.

DISEASES OF THE LYMPHATIC AND GLANDULAR SYSTEM

Scrofula.

In a state of health, every different portion of the body has its own peculiar vital power of attracting from the circulation such materials as are necessary to the growth and support of its own structure; and this same life-force impresses the materials thus attracted with its own peculiar nature.—Thus, muscle attracts materials necessary for the formation of muscle; bone, that which is proper for bone; and so of all the other tissues.

After these materials have served their time in their different form, they become unfit for farther use, when the absorbents (of which we have spoken) take them up and pour them into the general circulation, to be cast off by the secretions, while new materials are selected by the different organs to supply their place; and hence we have a constant process, in each organ, of building up and tearing down, which exists through life. This is the process of nutrition.

But as the power of attracting and assimilating in young animals is greater than the absorption, or tearing down, we have an accumulation; this constitutes growth. But, as life advances, and the powers of attracting grow weaker, and are unable to select materials as fast as the absorbents take them away, we have wasting, or decline, as observed in old animals. The same process produces fattening, or falling off. When these two processes are mutually balanced, we have a uniform state of health.

Now, this peculiar life-force, which governs the form, size, and nature of each different organ, and even the entire animal, is transmitted from parent to offspring; hence we have a peculiar form of the foal, resembling the parent. The temper, and also a predisposition to disease, are handed down in the same way. A defect of the eye, if constitutional,

will be transmitted to the offspring as unerringly as a star in the face, or a white foot. And so it is of that peculiar predisposition called Scrofula. It consists in a diseased process of nutrition; and, instead of certain tissues attracting certain materials, and appropriating them to their own peculiar structure, by an error in this life-force, they are unable to regulate the amount of material brought to them, or to assimilate that matter to its proper formation; hence a pouring out of unorganizable material is the result, which the absorbents are unable to take up, and hence we have an infiltration, and enlargement of certain tissues, which, though it may remain for a number of years dormant and innocent, yet it is a sure indication of this predisposition to disease. Enlargement of the glands about the throat, bony enlargements of various parts, a thickness of the eye-lids, and a frequent nasal discharge, from a disposition of the mucous membrane to take on diseased action from slight causes, are indications of the presence of this hereditary predisposition.

This taint, which exists from birth, may remain, for an indefinite time, perfectly dormant, and the animal enjoy good health, until poverty, exposure, or some simple disease, excites this predisposition into actual disease in the form of Glanders, Big-head, inflamed eyes, or some other of the many forms of Scrofula. And although these causes may create the disease in an animal previously sound, when long continued, yet it is oftener the case that they merely excite the disease in an animal previously so disposed. Some of the most common forms of Scrofula in the horse are Glanders, Farcy, Big-head, Fistula, Poll-Evil, Ophthalmia, &c.

Fortunate would it be for us, if we were enabled to distinguish horses in which this tendency existed, before actual disease occurred, in order to avoid breeding from them; and, by an appropriate treatment, to remove, if possible, such predisposition; and there are some marks which would lead to a suspicion.

A large head, with thick lips and eye-lids, narrowness of the chest, a preponderance of the bony and the glandular over the muscular system, enlargement of the glands of the throat, a frequent discharge from the nose, and a tendency to inflammation of the eyes, produced by slight causes—as common cold, or a hay seed—are some of the symptoms which would induce us to fear the existence of some such hereditary tendency.

Diseases of the simplest kind are apt, in horses of this description, to excite Scrofula in some of its forms. In such, a mild catarrh may leave a nasal gleet that may eventually degenerate into glanders

or chronic cough, and usually causes suppuration of the glands about the throat; or the cutting of a tooth, or a slight blow, will excite Big-head; and a bruise, that would not injure another horse, would in them produce Fistula or Poll-Evil.

Much research and observation are wanting, however, to distinguish such horses, while yet in health, from those in which no such taint exists. I knew a stallion that showed every mark of vigorous health, and none of those symptoms that would lead us to suspect a scrofulous diathesis, except a scaly eruption, which occasionally made its appearance about the eye-lids and nose; yet half of his colts showed the scrofulous taint in the forms of scrofulous Ophthalmia (moon-blindness), chronic cough, Fistula, Kidney disease, &c.

Treatment.—If a horse is suspected to have this hereditary tendency, his habits should be regular, not over-fed, over-starved, over-worked, or exposed to severe weather. Any hardships, debilitating diseases, or too high living may excite some of the forms of Scrofula. By such treatment, we may carry him through a long life without developing the disease; and hence this predisposition can scarcely be said to constitute unsoundness. Where the disease is actually developed, our treatment will be varied according to the part affected; the constitutional treatment will, however, be the same in all cases. Regularity of diet, exercise, and temperature, is advisable; and then we want something to improve nutrition, and to excite the absorbents to take up any unhealthy deposits that may have taken place, and this is effected by iodine 6 grs., carbonate of iron 23, gentian 23, given once per day, in ball or mash, for a considerable length of time.

Or, sulphate of iron 23, ginger and gentian, each 1½3;

Or, corrosive sublimate 10 grs., with the ginger and gentian;

Or, blue-stone with the ginger and gentian, are all valuable tonics, but should be continued for a considerable length of time to succeed. The corrosive sublimate, however, if given, should be discontinued as soon as the horse slobbers and hangs his head.

If the horse is poverty-stricken, the food should be improved; if in too high keeping, a bleeding or a dose of aloes should precede the tonic.

I shall now notice some of the different forms of Scrofula.

Glanders.

Symptoms.—A mucus discharge from one or both nostrils, usually from the right when but one is

affected, with an ulcer on the lining membrane, readily seen by inspection. The discharge soon becomes thick, yellow, and purulent. Loss of appetite and flesh, with a staring coat, usually precede this symptom.

The ulceration extends more or less rapidly along the wind-pipe to the lungs, the joints suppurate and discharge a fetid pus, ulcers form over the body, and hectic fever, with wasting of flesh, now makes its appearance, and the horse dies, a putrifying and loathsome object of pity.

(Concluded in our next.)

BAREFOOTED NOTES ON SOUTHERN AGRICULTURE.

BY AN OLD GRUMBLER.

NO II.

Lack of Pasturage.—*Necessity for Abundant Food.*—*Herds at Rest.*—*The proper Pasture Grasses.*—*Bermuda.*—*Means.*—*Duncan Grass.*—*Our New Pasture.*—*Hay-Making.*—*Bermuda, Crow-foot, and Crab Grasses Natives of India.*—*Hay and Cotton crops of 1850.*—*Economy of Nature.*—*Mother Earth.*

The necessity of a liberal supply of animal food for the laborer, and its production on the plantation, were the themes of our first number. Hinting there, that to accomplish those things would require great changes in our system of cropping, it shall be our present task to point out those changes, and the modes of their accomplishment. The present impoverished state of the soil, does not admit of the routine of grazing to any profitable extent, for all land that will produce the annual grasses is deemed good enough for cultivation in corn, cotton and wheat. Without an extensive range for grazing, or economical and well-systematized practices of soil-ing stock, there can be but small additions made to the dung-pile, and the consequence is, that under a system of tilled crops, if the soil is not well fed, sterility invariably advances more rapidly than fertility.

The grazing system, when the pasture is old field already exhausted, is a very bad one, for the animals wear out their vitality in seeking the herbage to sustain their frames. If an ox has to labor all day, in gathering his food, from meagre pastures, he more frequently retrogrades in condition than advances. So with all other animals. Like the wild deer of the forests, they must have plenty of food, at short and stated intervals, and the periods of rest must be as frequent. Hence, on luxuriant pastures, we see the quiet herd, seeking the shade, to ruminate and grow fat—whilst, on barren fields, restless kine roam, lowing and goring, devouring

every green thing in their path, like a horde of desert locusts, and with as little seeming benefit to themselves.

But, on every plantation of the South, the deficiency now existing could be remedied by the preparation of permanent pastures. These could be made so, only by the proper preparation and enriching of suitable lands, and stocking them with such grasses as are well known to flourish and succeed, under the rigors of our scorching sunshine. To do this, we cannot rely upon the fibrous-rooted grasses, which throw up their leaves from the crown, but upon fleshy-rooted varieties, which send up stalks from every eye, and which, from their nature and habits, are perennial. Of such is the despised Bermuda (*Digitaria Dactylon*), which produces, even on high lands, sweet, nutritious herbage, highly relished by all domestic animals. It is to the South what the Blue Grass (*Poa pratensis*) is to Kentucky, and, if properly managed, is by far the most valuable grass we can adopt, either for pasturage, or, on rich alluvial lands, for mowing. This is the celebrated *Doub grass* of the East Indies, and it furnishes, on the plains of the Ganges and in many of the Eastern tropical islands, the richest grazing lands in the world. In Bermuda, with its light, sandy soil, the climate arid to a destructive degree for nine months in the year, to all other grasses, this alone flourishes, and sustains in good condition large herds of cattle and sheep—in fact, sufficient numbers to furnish most of the animal food consumed by the inhabitants. Another variety, regarded with horror by the cotton-planters, is the "*Means grass*," (*Sorghum halapense*) Panicked Millet—a native of Nubia, Syria and Greece, would be a valuable adjunct in stock-feeding, if it could be kept within limits. The Bermuda grass does not perfect seeds in our climate, and hence it is easily controlled. We have lived all our life on a plantation which had, from our earliest recollection, a spot of Bermuda grass. This, to our certain knowledge, has not spread except by the roots. We have also planted, ten years since, a variety of Panicked Millet, which is seedless. This is known as the "*Duncan grass*," and is identical with the "*Means grass*" in stalk, root, leaf, and habit, but has no fertile florets, and hence is not propagated, except by the roots. It did not spread three feet on either side of the plat on which we first planted it, during a term of seven years. For three seasons past, we have been laying down a permanent pasture of this grass, which, upon ordinary light, sandy land, with a clay subsoil, furnishes an unparalleled amount of forage. It grows thickly upon the field, to a height

of four to six feet, and soon fills the soil with its fleshy roots, which are frequently an inch in circumference, furnishing the very best winter food for swine and sheep. For sheep, the roots should be turned up with a plough, and they go to work nibbling them out of the ground, with an avidity which evidences their value. After a field is set with this grass, we are certain that fifty acres would sustain fifty head of cattle, and one hundred sheep, during the Spring, Summer, and Autumn months, whilst ten acres, treated as meadow, and made rich by compost or other more stimulating manures, would furnish hay enough to keep them fat in the Winter. It is of most rapid growth, the first grass to make its appearance in Spring, and would bear mowing every six or seven weeks. The hay of this grass is more nutritious than that of any grass used for this purpose in the South—except the Bermuda—Crow-foot—(*Eleusine indica*;) and crab grass—(*Digitaria Sanguinalis*), all of which are natives of India, but have become naturalized to our temperate region. We regard the "*Duncan grass*," (as we shall designate it hereafter,) as a great blessing to us. It is now *not fertile*, but we have fears that it may be impregnated by the Means variety, which rapidly propagates itself by the seed. The latter is becoming generally diffused over many parts of the State, where its presence is not even suspected.—We have found it in many localities, during the past three years, where it could only have been carried by birds or animals.

Our remedy for exhaustion and sterility, is to devote the hills to these grasses—make permanent pastures and rear cattle, hogs and sheep enough for our comfort and consumption. The hay crop of the United States in 1850 was worth \$138,000,000; the cotton crop \$78,000,000—showing that this item of consumption exceeded that of our great exporting staple \$60,000,000. How much of this \$138,000,000 was paid by our cotton-planters, is not now our business. But it is the great question for Southern people to determine, whether they will contribute to their prosperous independence, by a change of their system, which would enure to their benefit in more ways than by the immediate remuneration always attending home production. Pastures, properly planted and laid out, stocked with these permanent grasses, with an eye to producing all the animal food to sustain the plantation, would soon reverse the pictures of *sterility* and *soil-waste*, which now meet the eye wherever we go. Pasture lands when stocked with fat animals, always become rich. Cattle and sheep grazing together on the same field, are a benefit to each other, as one rejects what is food

for the other. Cattle delight in soft, tender grasses—sheep in browse, briars, weeds, and the foliage of herbaceous plants. This is one of the great economical provisions of nature, exhibited in domesticity, and controlled by the same provisions which enable myriads of wild beasts to feed and fatten in company, over the same plains, in Central Africa. From such incidents let us take the lesson—first let us furnish food for domestic animals, and if we do this in abundance, nature will not regard us with a stinted hand, but will return to us wholesome animal food—the elements of constitutional vigor, and prosperity, to every nation which enjoys it; and, carrying in its train of reproduction the attendant luxuries of fruits and flowers, and fatness to the earth—that mother earth, who smileth only on those who return to her a liberal portion of what she so generously yields to energy, industry, and honest toil.

For the Farmer and Planter.

“STRAINING AT A GNAT AND SWALLOWING A CAMEL.”

MR. EDITOR:—I have been no little amused by the parade of virtuous indignation, on the part of certain journalists and demagogical politicians, at the flagrant usurpation of power by the Department of the Interior, in calling together an “Advisory Board.” The only wonder to me is, the stupidity of the Department—not in calling together the Board, but in not providing for a wholesale approval, by securing the advocacy of the disaffected—a little per diem and mileage would have settled the matter so handily. But whether the “Advisory Board” be a “Jacobin Club,” or a humbug, I know, or care, but little; but I am sure of one fact, that half a dozen common-sense farmers could, in six hours, introduce a reform in the Patent Office, or make suggestions in relation to the Agricultural Statistics of the next census, that would save the country a vast deal of money and botheration.

I am not prepared to say whether the Agricultural Department of the Patent Office is a humbug or not. It has done much good, I am sure; and I am not sure that it has done much harm. It may be a very “expensive seed-store” to the Government; and, it may be, that those who are able to buy, would prefer making their own selections; but some people are glad to get their seed for nothing, and make experiments. All experiments are expensive; and, if the Government is to be deterred from touching everything out of the common routine, because it may prove an expense, progress will be slow. The chief opposition seems to come

from seed-store operators; and, if the Post Office can keep them in bounds, it will pay a good dividend. The country can never be worse imposed on than it has repeatedly been by seeds-men.

I am free to confess that, upon constitutional grounds, I would be opposed to the uses made of the Patent Office; but what is the sense of “straining at a gnat and swallowing a camel?” We know that the money will be spent upon one tom-foolery or another: it must be spent to keep up peace and party; and the only real question of interest is, whether it is better to spend it in costly and fanciful editions of Japan Expeditions, Pacific Railroads, Explorations, and Schoolcraft Indian-iquities, to adorn the libraries of the members of Congress, and their favorites, or for a few seeds, plants, cuttings, and Agricultural Reports, to be distributed amongst the poor folks? If I could set things right, I would do it; if I were called on to vote, I would vote, No. But would’nt it look very stupid in a fellow dying of hunger, to swear he would not eat a mouthful of the victuals set before him, because they had been put there without his consent, and were, part of them, got out of his own larder?

A FARMER.

From the Farmers’ Com. and Horticultural Gazette.

FATTENING ANIMALS.

There are certain principles which apply to the feeding of all animals which we will shortly notice.

1. The breed is of great importance. A well bred animal not only affords less waste, but has the meat in the right places; the fibre is tender and juicy, and the fat is put on just where it is wanted. Compare the hind leg of a full-blooded Durham ox and a common one. The bone at the base of the tail extends much further in the former, affording more room for flesh, and the thigh swells out—of convex or circular shape—while in the common ox it falls in, dishing, and hollow. Now, the “round” is the most valuable cut, and is only found in perfection in high-bred stock. The same is the case over the whole body. So well do Eastern butchers understand this, that their prices are regulated by the breed, even where two animals are equally fat. They know that in a Durham or Hereford ox, not only will there be less offal in proportion to weight, but the greatest quantity of meat will be where it brings the highest price when retailed, and will be of a richer flavor, and more tender fibre. The same is the case with hogs. A large hog may chance to make more meat on a given quantity of food than a small one, but the meat of the first will be coarse and tasteless compared with the other; and in the East, flavor and tenderness greatly regulate prices. Consequently, moderate sized, short-legged, small-headed hogs, always, in the long run, beat large breeds out of favor. In preparing for a market, “fashion and taste” must be as much considered by the farmer as by the tailor. This one

fact is, at present, revolutionizing the English breed of sheep. The aristocracy always paid high for small Welch and Scotch mutton; but the great consumers, the mechanics, preferred large, fat joints. The taste is now changed. In Manchester, and such other cities, these large joints have become unsaleable; and all the efforts of the breeder are now turned towards small breeds maturing early, with comparatively little fat. According to late writers, the large Leicester and Cotswold are going quite out of fashion. When we give \$3,000 for a Durham bull, it is not that his progeny are "intrinsically" more valuable to that amount, but the increased value and the fashion together, make up the difference. And it is thus, that while Durhams and Herefords are preferred for ships, and packing, Devons are high in repute for private families.—The joints are smaller, but the meat has a peculiar richness, probably found in no other kind of stock: and the proportionate waste is said to be less than in any other breed. Thus, in the London market, the Scotch Kyloes, and then the Devons, (the former even smaller than the latter) bring the highest price, because preferred by the aristocracy. So in Dublin, spayed heifers are sought for. But the breed also regulates the profit. There is nothing more certain than that one kind of animal will fatten to a given point on much less food than another; and as fattening our stock is only another mode of selling our grain and grass, those animals are to be preferred which come to maturity soonest, and fatten on the least food. The difference in hogs is very great and important. While some breeds must be fed for two, or even three winters, others are full grown, and fattened at ten months old; and the difference in profit is enormous. We cannot go into particulars, but the following rules may be considered as applying to all: An animal may be expected to fatten easily when it has fine, soft, elastic skin, with thin or silky hair; the head and legs short, the "barrel" large, but chest and lungs small; and when it is quiet, sleepy, and easy in temper. An unquiet, restless, quick-tempered animal, is generally a bad feeder, and unprofitable.

2. Much depends in fattening on outward and mechanical management. Fat is carbon, or the coal which supplies the body with heat. If we are exposed to cold, it is burnt up in our lungs as fast as it is deposited by the blood; but if we are kept warm by shelter or clothing, it is deposited throughout the body, as a supply on hand when needed. Warm stables and pens are a great assistance in fattening, and should never be neglected. So, also, quiet and peacefulness are important. Every excited action consumes some part of the body, which has to be supplied by the food, and detracts from the fat. In the climate of Michigan, warm stables, regular feeding at fixed hours, and kind treatment, with perfect cleanliness, save many a bushel of grain.—Animals fed at irregular times are always uneasy and fretting.

3. Ground and cooked food fatten more profitably than raw food. Mr. Ellsworth found that hogs made as much flesh on one pound of corn, ground and boiled to mush, as two pounds raw unground corn; though the first did not fatten quite as rapidly, as they could not consume as much food

in the twenty-four hours. By grinding and smoking, ten hogs will each gain 100 pounds in weight, on the same food that five would do if it were raw.

4. A change of food helps in fattening. Thus, an ox fed entirely on corn and hay, will not fatten as fast, or as well, as one which has roots, pumpkins, ground oats or buckwheat, &c., fed to it at regular periods. The latter may contain intrinsically less nourishing matter than the corn, but the change produces some unknown effect on the stomach and system, that adds to the capability of depositing fat. The best feeders change the food very frequently, and find that they make a decided profit by so doing. Salt should be given with every meal to cattle—say an ounce a day. It preserves the appetite and prevents torpor of the liver, to which all fattening animals are subject. This torpor, or disease, is, to a certain extent, conducive to fat; but, carried too far, the animal sinks under it.

5. In cattle, the skin should be particularly attended to. A fat animal is in an unnatural state, and, consequently, subject to disease. Taking no exercise, it has not its usual power of throwing off poisons out of the system; and if the skin is foul, the whole labor is thrown on the kidneys. It is found, by experience, that oxen regularly curried and cleaned, daily, fatten better than when left to themselves; and if the legs are pasted with dung, as is too often the case, it seriously injures the animal.

6. Too much rich food is injurious. The stomach can only assimilate a certain quantity at once. Thus, an ox will prosper better on thirty pounds of corn and thirty pounds of cob, ground together, daily, than on forty pounds of ground corn. These mixtures are also valuable, and saving of cost for hogs when first put in the pen. If an animal loses its appetite, the food should at once be changed, and, if possible, roots, pumpkins, or steamed hay, may be given.

7. Oxen will fatten better if the hay or stalks are cut for them—but care must be taken not to cut too short. An inch in length is about the right size for oxen, half or three-quarters of an inch for horses.

POOR SOIL.—An inquisitive Yankee was standing at the tavern door, in the lower part of Jersey, watching a funeral pass by. At the head of it was a large manure cart, moving along very slowly, and making no offer to turn out for the procession.—The Yankee was astonished at this want of attention on the part of the driver of said cart, and, turning to a Philadelphian who was standing by, he remarked:

"I guess the folks aint very perlite about here; tu hum where I live, they always turn out for a funeral."

"Oh, that's a part of the procession," remarked the Philadelphian, gravely.

"Du tell? Yeou don't say so! Heow!" exclaimed the astonished Yankee.

"Why, you see, it is a very poor, sandy soil about here, and nothing comes up they plant, unless they manure it well; so, when they bury a fellow, they throw a whole cart load in the grave, *to make him rise at the Judgment day!*"

From the Michigan Farmer.

THE PERNICIOUS INFLUENCE OF WATER AND WATERY FOOD ON YOUNG STOCK.

There is too little attention paid to the feeding of young stock, and we find frequently that many valuable animals are lost from diseases of the bowels, which arise from no known cause. A French writer notices this fact, and observes that the assimilation of nourishing matters is in proportion to the energy of the digestive passages; and if the digestive organs are relaxed by an excess of drink, or by food that contains more water than the animal needs, then there is a loss of time.

Animals drink only when they are thirsty, and their own instinct is the best rule; but the ignorant feeder frequently endeavors to force more water into the young animal than it needs, by mixing the food which it likes with water, and thus exciting it to drink more than it needs. It may be noticed that a very great number of good cows, which give a large quantity of milk, are poor nurses, and seldom have thrifty calves. The reason of this may be found in the fact that the calf which depends upon such a cow, has to swallow a large quantity of water, in which there is little nutriment, before it can obtain enough to satisfy its appetite. The nutritive matter floats on such a large quantity of water that it cannot be assimilated, and the water itself relaxes and loosens the alimentary channels, so that they perform their functions imperfectly. The calf consequently remains poor, its muscular system is not filled out, and, while its paunch is full, its bones are sticking through its skin in every direction.

The cause of this state is easily explained. The stomach and the alimentary canal are dilated under the pressure of the mass of food which has been swallowed, and they crowd the lungs; consequently the respiratory organs cannot be filled, and are constrained in their action, the ribs are bowed out under the weight of the intestines, the chest cannot develop itself, and the breast remains narrow, and badly shaped. The young animal thus raised is always defective. A calf will seldom be seen to drink if allowed to suckle a cow that is a good milker, even where it is fed crushed grain or meal of any kind; though water should be kept in its reach in our hot, dry climate.

It may be remarked that calves are sometimes subject to a diarrhoea, or scours, in the Spring; this arises solely from the watery nature of the food on which dams are fed; for at this time, the young grass and clover contain a very large proportion of water, and, to obtain the nutriment required, a vast quantity of water has to be swallowed. The remedy, in all such cases, is to give a drier food, and one which is more nourishing in proportion to its bulk.

Amongst hogs, the effect of this treatment is very perceptible, and if we go into almost any barnyard at the present time, the litters of young pigs will be found in a shape which shows that they have been improperly fed. Whilst the young pigs are with the sow, and she is fed reasonably well, the pigs are straight on the back, round, with bodies and heads well proportioned; but as soon as they are taken

from their dam, they are fed the swill and dishwater of the house, which contains a very large proportion of water, and the least possible quantity of solid food; the immediate consequences are, that the belly of the pig bloats out, and hangs down, the muscles of the hips and shoulders dwindle away, the head looks as though it were too large to be carried around with convenience or ease to the animal; the neck fades into a bundle of tendons without any muscle or flesh; the chest becomes narrow and lean, and the back is humped up. We are very sure that our readers will be able to see any quantity of this kind of animals in their neighborhood, and wherever they are, let them be put down as specimens of the effects of too much water and too little food. A pig once let down in this way for two months of the time when he should be growing, is a decided loss to the breeder, for not only has he lost all the time and food that the animal has already used up, but it will take a large quantity of food, and considerable time, to bring the animal back into a condition and shape that will fit him to make the most of the food on which he is to be fattened for market. Feeders should bear in mind that water is not food, though necessary to enable the animal to convert food into pork or beef.

From the Ohio Cultivator.

FAST HORSES AGRICULTURALLY CONSIDERED.

In all our horse talk and writing, we have spoken disparagingly of that class of horses the only merit of which is, that they are merely fast. These gaunt, leggy spiders, that can do nothing but run, are about as useless in this world as those fancy gentlemen in flashy vests, who generally attend them in their airings. And we have still less sympathy with the gamblings attendant upon the meetings of this class of men and horses upon the turf. We have never attended such a meeting, and have no desire to. Thus much for our disclaimer.

Of late, quite a respectable portion of the agricultural press, and many of the news and literary papers, have come down upon the "trials of speed" at agricultural fairs, which they say is only horse-racing, under another name. Well, it is hard to say just where we pass the line of healthful rivalry, when once we enter the path of competition. Mrs. Smith and Mrs. Jones both compete for the prize for the best ten lbs. of butter, Mrs. Jones does her best, but Mrs. Smith does a little better, by her superior dexterity with the skimmer or the ladle, and she wins. Here is a woman race, with all of its rivalries and expectations and disappointments, on a small scale. Almost everybody says it is right; we shall not dispute with them. Clark has a Suffolk pig—he believes in Suffolks. White has a Byfield—he believes in Byfields. Clark and White set out to see which will make the best porker in a given time. One tries the jugglery of ground and cooked feed, the other the mystery of steamed potatoes and corn in the ear. One beats, of course, and the other thinks he cheated. Here is a hog race. Judge B. and General C., being troubled with plethoric purses and ambitious brains, go to England or Timbuctoo, and each buys another calf, which is educated and brought up far more care-

fully than those who call them father, and at a proper time exhibited for the big prize. Here is a bull race, a step or two in advance of the others.

Charley has a nice filley, with thin, sloping shoulders, long hip, and such a good walker; he would like to see the nag that could out-walk his filly. Charley is riding into town, and Jim comes up on the same errand, and having learned the state of Charley's mind, accommodates him to a walk with his sorrel for a quarter of a mile; the stakes are the good opinion of each boy for his nag.—Charley loses. Nobody ever thought that was a horse-race; well, may be it wasn't. At the county fair, John had a Morgan and Will had a Bellfounder; standing still, the judges could not tell which was best, and as one or the other had to be best, the judges said, "Let's see them move." John trotted, and Will trotted; John trotted faster, and Will trotted faster; John trotted as fast as he could, and Will trotted as fast as he could, and they both trotted as fast as they could, and kept on trotting; and the people gathered about, and each one of the five thousand made up his or her mind which horse they would rather have, and so did the judges, and the trotting was over. And then some folks thought they began to smell a horse-race! and some folks have a nice and discriminating sense of smell. Our olfactories are not that sharp.

But enough of this pleasantry. We are willing to take a more serious view of the subject. One objector says, "Fast horses are *not* an agricultural necessity, nor even an agricultural product. No practical farmer need be told that the rearing and training of such horses is at utter variance with agricultural success. Fast horse-flesh has no practical value since the introduction of railroads and telegraphs." That is what a young gentleman wrote of the late exhibition of the United States Agricultural Society at Philadelphia.

Is it an "agricultural necessity" to raise fifty bushels of wheat to the acre, and so get fifty dollars instead of fifteen dollars for your crop! Is a two thousand pound bullock an "agricultural product?" Let us abolish these railroads, so that the beeves we send to Gotham will get nice and tough, as in former years, by a four weeks' travel on foot, because these New Yorkers are getting better steaks than they deserve, and our cattle-feeders are getting too much money. Let us have a moral reform society, and petition the Legislature to pass an Act, forbidding any farmer to raise a colt that can trot faster than a mile in fifteen minutes, or that shall be worth over fifty dollars at four years old, because "fast horse-flesh has no practical value" now, and a five-hundred dollar colt is "not an agricultural product."

Oh, George! It may do to talk that way in Sleepy Hollow, but the very Quakers of Ohio would laugh at you for telling such stuff out here. You should have seen Friend Joseph put his Black Hawk around the ring at Cleveland, and Friends William, and James, and Thomas, and John, and lots of others, among the fastest and most successful competitors. Do you say Ethan Allen is not an agricultural product? and our Champion Black Hawk? Flying Cloud? Highlander? Monarch? Hassan? Kennebec? You never sat in the buggy

with Reber of Lancaster, after his black mare, or with Brown of Trumbull, after his gray, or rode through the oak openings of the Darby with Fullington beside his Morgan stallion, chasing cattle. Take a seat with our farmer friend, Mordecai Lee, of Stark, after his Fly, and when the wind begins to whistle in your ears, ask Mordecai what he will take for the mare, and see how quietly he will tell you, she is not for sale; and after a little more such experience, learn some good hard horse sense, and confess that raising of such stock is *not* "at utter variance with agricultural success."

We can hardly bring our pen to write seriously on this subject, after all. Life is but a race, of one kind or another, and the best advice we have to give is, not to run against each other's sulkeys, or leap ditches so wide that you will stick in the middle. Don't get out of breath, and don't fret. So we will all come to the end of the race in good order.

From the New Genesee Farmer.

BEST TIME FOR CUTTING TIMBER.

We suppose another age must pass away before the notion of *lunar influence* on timber will be entirely exploded. When the yielding mind of childhood receives a wrong impression from a parent or perceptor, and it is allowed to *harden* for years before philosophy attempts to efface it, argument too often glances off like water from a goose's back.

On what does this notion rest? Why, the moon raises tides on the ocean. Admitted; but on what else is its influence felt? If it has not *room enough* to raise tides on our lakes, can it possibly raise tides of sap in the pores of a tree, where a microscope is necessary to discover them?

But if it did raise the sap, what advantage could we derive from that knowledge? It would raise tides every day; and no one particular time would be better than another.

It has been handed down to us as a rule worthy of remembrance, that "the old of the moon in February is the best time to cut timber." But why is the *old* of the moon better than the *new*? This question might puzzle a Philadelphia lawyer. The "old of the moon" may come on the first day of the month; or it may come on the last—it may differ a whole month. The sap may be frozen, and the moon not able to stir a particle. Or, can it act on solids as well as fluids? If it can act on frozen timber, why not on seasoned timber, or solid rock? We cannot understand such occult principles. We admit, indeed, that the time prescribed may serve well for cutting *some* kinds of timber; but, certainly, it is not the *best* time to cut *all* kinds of timber.

We believe it may be laid down as a maxim, that *timber is most durable if cut when it contains the least sap*; and we have no knowledge that sap ever runs from a tree in full leaf. On a former occasion, we stated a fact, from an observant neighbor, that basswood rails, which he cut when the sap was in full flow, rotted before they seasoned, though immediately laid up in a fence. On the reverse, we have several instances of timber cut in Summer that proved very durable, with not one case to the contrary. We therefore infer that the gradation from the best time to the worst, is in the following

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order: Summer, Autumn, Winter. No timber should be cut in the Spring, before the tree is in full leaf.

Physiologists, when treating of the functions of plants, have been too fond of drawing general rules, like other people, from a few observations. Because the sap of *some* trees flows not in winter, they have erroneously concluded it was so with *all*. The sap of the sugar-maple, however, flows as soon as the leaves drop in Autumn; therefore, to have that timber durable, it should be cut when the tree is in leaf; and as every leaf is employed in pumping out the moisture, it might be well to let the tree lie untrimmed till they are withered.

A timber tree may be very valuable, or otherwise, according to the time of cutting it; and in this country, where they are growing scarcer every year, it is more especially important to have the best information on the subject.

From the New England Farmer.

ASHES.

There appears, at present, to be but one opinion among practical men in relation to ashes, when applied as a stimulant to the soil, and that is, that they are of great value. This is, indeed, abundantly demonstrated by science, and no one familiar with the developments of chemical science, or with the obvious practical results produced by the ashes of vegetables, will, for a moment, doubt their value as an application to most soils and crops.—All vegetables, without a single exception, produce ashes upon incineration, or burning. These ashes, however, differ in their chemical constitution, as well as in quality; and there are differences in the composition of the ashes produced by the several parts, or members of the same plant. To demonstrate this fact, the able chemist, DESAUSURE, instituted a set of very elaborate experiments upon the wheat plant, straw and grain, and found the result to be as follows:

Of wheat straw. Of wheat grain.

100 parts of ashes contain—

Carbonate of Potassa.....	12.5.....	15.
Phosphate of Potassa.....	5.	32.
Hydrochlorate of Potassa.....	3.	0.16
Sulphate of Potassa.....	2.	
Earthy Phosphates.....	6.2.....	44.50
Earthy Carbonates.....	1.	
Silica (sand).....	61.5.....	0.50
Metallic Oxides, (iron).....	1.	0.25
Loss	7.8.....	7.59

All of these ingredients, both of the straw and grain, are derived exclusively from the soil—from terrene elements—and, in order to render lands fruitful in producing this crop, they must, where they do not exist naturally, and in sufficient quantity, be artificially supplied. They are the inorganic constituents of plants.

If we burn *humus*, or the residuum of vegetables left after putrefaction, we shall find that many of the non-volatile, inorganic constituents of the vegetable structure remain in the ashes, for putrefaction is a sort of combustion, and so far as the question under consideration is involved, produces nearly identical results. The ashes of wood and bark abound in these constituents, and, therefore, are

possessed of a specific and easily ascertained value as a stimulant of vegetable life. Every farmer must have witnessed the highly beneficial effects which they produce on corn, beans, and the cereal grains, as well as upon grass lands, and especially upon pastures, upon turnips, cabbages, onions, and other esculent vegetables.

They are also possessed of a very high value as an ingredient in compost, tending, by their alkalescent action, to promote decay, and the neutralization of acids in the mass to which they are applied.

VALUE OF SHEEP TO THE FARMER.

Sheep are profitable to the farmer, not only from the product of wool and mutton, but from the tendency which their keeping has to improve and enrich his land for all agricultural purposes. They do this:

1. By the consumption of food refused by other animals, in summer; turning waste vegetation to use, and giving rough and bushy pastures a smoother appearance, and in time eradicating wild plants, so that good grass and white clover may take their place. In this respect, sheep are of special value to pastures on soils too steep or stony for the plow. In winter, the coarser parts of the hay, refused by horses and cows, are readily eaten by sheep, while other stock will generally eat most of that left by these animals.

For these reasons, among others, no grazing farm should be without a small flock of sheep—for it has been found that as many cattle and horses can be kept with as without them, and without any injury to the farm for other purposes. A small flock, we said—perhaps half a dozen to each horse and cow would be the proper proportion. A variety of circumstances would influence this point; such as the character of the pasturage, and the proportion of the same fitted and desirable for tillage.

2. They enrich land by the manufacture of considerable quantities of excellent manure. A farmer of long experience in sheep husbandry, thought there was no manure so fertilizing as that of sheep, and (of which there is no doubt) that none dropped by the animal upon the land suffered so little by waste from exposure. A German agricultural writer has calculated that the droppings from one thousand sheep, during a single night, would manure an acre sufficiently for any crop. By using a portable fence, and moving the same from time to time, a farmer might manure a distant field with sheep at a less expense than that of carting and spreading barn manure.

The value of sheep to the farmer is much enhanced by attention to their wants. Large flocks kept together are seldom profitable, while small assorted flocks always pay well, if fed as they should be. To get good fleeces of wool, and large, healthy lambs from poor, neglected sheep, is impossible.—It is also true, that the expense of keeping is often least with the flocks that are always kept in good condition. The eye and the thought of the owner are far more necessary than large and irregular supplies of fodder. Division of the flock and shelter, with straw and a little grain, will bring them to Spring pastures in better order than if kept togeth-

er with double rations of hay, one-half of which is wasted by the stronger animals, while the weak of the flock pick up a scanty living, and often-times fail to get that through the whole Winter.

We commend this subject to the consideration of our correspondents—it needs attention on the part of the farming public.—*Country Gentleman.*

From the Louisville Journal.

THE ECONOMY OF FOOD.

In order that the reader may arrive at a right understanding of the economical uses of food, it is necessary for him to know not only that food is of several kinds, but also that it serves several different purposes in the animal economy.

In the first place, every effort of thought, every contraction of muscle, every change of texture, is attended by the combustion or loss to the animal economy, of a certain quantity of food; or, in other words, it takes a given amount of food to keep a horse or other animal in the same state of flesh.—We have so many pounds of corn, or oats, or hay, to keep him alive and in condition. The quantity and quality of this necessary quantum of nutriment vary with the activity or exercise of the animal, and also with the temperature of the atmosphere. Now, the uses which in this case the food serves are compared. In the first place, a certain quantity is expended in making good the daily waste of the tissues—chiefly the muscular; in the second place, a certain other quantity is used up in maintaining the animal heat, and assisting in manufacturing processes concerned in the maintenance of these great functions.

On the other hand, the quality of food required for these several purposes varies with the purposes. For, nitrogenized food is required for the growth and maintenance of muscular tissues; and non-nitrogenized substances for the production of animal heat; while the alkaline earths seem to be necessary for the elaboration of these results, as well as those accessory changes necessary for the processes of purification. When the horse works hard in warm weather, he will need a food rich in nitrogenous matter; and when he stands without work, he will need the alkaline earths.

These premises being admitted, it is only necessary now to know the most accessible sources of these several kinds of food.

The grains and grasses are almost the only kinds of food which can be economically gathered and preserved for such uses. All of these yield, though in varying proportions, the several varieties of nutriment. Oats, wheat, rye, barley, peas, and beans, are richest in nitrogenized or muscle-producing material; while corn, linseed, and the grasses, if cut at the right season, yield the largest proportional quantities of heat and fat-producing food.

It follows from this, that if a working horse is fed upon corn alone during the hot months, he must consume an excess of heat and fat-producing elements, in order to obtain the quantity of nitrogenized substances necessary to maintain his strength; while, if fed upon wheat in winter, he would have to consume a large excess of nitrogenized food in order to obtain the necessary supply of food for

heat production. Whenever an excess of one or the other of these materials is consumed, that excessive consumption entails a direct loss upon the feeder, and, also, by surcharging the animal, impairs his usefulness, and increases his liability to disease.

The same considerations apply to feeding all other animals. In the case of the horse, we want to obtain muscular force, activity, strength, endurance, &c.; but in the hog, we want chiefly fat, and some muscle.

In the production of animal substances for food, the feeder desires to get the largest amount of bulk, including fat and muscle. All that food which is expended in repairing waste and supporting animal heat is lost, at least for all economic purposes. A bullock or a hog fed upon only that which maintains its conditions, contributes nothing to the wealth of the farmer. His only gain is that surplus bulk which can be acquired over and above the daily necessities of the creature's life. In the growth of animals from early to adult life, the food required is mainly such as contributes to the growth and maintenance of muscular tissues and bones; but in the adult animal such food is needed in smaller quantities. The only increase in value in such animals is derived from the accumulation of fat. How are such animals to be fed? Food that contains sugar, starch, and oil, in excess, possesses the largest fattening properties. No one thinks of fattening hogs on rye, wheat, barley, or oats, while universal experience points to corn, pumpkins, potatoes, parsnips, and the like.

The feeder must remember, however, that if the animal runs at large, or is exposed to the inelimity of the weather, a large amount of food that would otherwise go to increase the bulk of the carcass is consumed in making good the waste induced by exercise, or in meeting the large demand for animal heat.

Thus, the horse standing still in a warm stable soon fattens on that quantity of food that only keeps him in present condition when laboring.

A consideration of these facts shows the necessity for two external conditions which contribute to the economy of food. These are protection from the weather and quietude. Now, the crude experience of feeders shows that if cattle or hogs are kept, the one in stables, and the other in pens, they fatten with much greater rapidity, and, of consequence, with more economy. How much is gained by quietude, and how much by protection, has not been determined with accuracy, even in general terms, much less in relation to actual practice in varying degrees of cold.

But still, observations are sufficiently abundant to show that the general proposition is universally correct.

TO WAR WITH WITCH-GRASS, AND HOW TO KILL IT. Cover your ground heavily with brush—spruce, fir, pine, hemlock, alders, &c.—it must be well covered. Do it through the Winter, or in March, by hauling the brush on, and about the middle of September burn, but mind you have it dry; after the first rain sow down with winter rye, herds-grass and clover, and bid your witch-grass adieu.—*Me. Farmer.*

The Farmer and Planter.

COLUMBIA, S. C., MARCH, 1859.

HINTS FOR THE MONTH.

The best manager will now and then be puzzled "what to do for the best," when an unexpected change in the weather strikes him in the face. All beginners should keep well posted up on the small jobs to be dove-tailed into the regular work from this time out—for henceforth there will be very little chance for piddling. It is no bad notion to jot down such things as you may, from time to time, notice amiss; and remember that there is no maxim on a plantation more worthy of rigid observance, and constant repetition, than that "a stitch in time saves nine."

The month of February has been a very embarrassing one to the planter. The soil has been saturated with water; 4 1-5 inches of rain has fallen during this month. The plow has done but little, save in some favored localities. Very little oats has been sown, and the Fall sowing, in many cases, has been injured by the freezes in the early part of the month. Get your oats plowed in as soon as you can, and be sure to put down seed enough to the acre—they will have but little time to branch after this. If your wheat is growing too rapidly, or you have any dread of the "hessian," turn your sheep upon it whenever the ground is dry enough. About one sheep to every two acres will be enough to keep it out of harm's way.

"What is worth doing, is worth doing well," is an adage that should be, just now, fixed in every farmer's mind. Remember, that upon every step taken,—every furrow run—depends much of the success of your future operations. Land plowed too wet now, will not recover from it this year; land plowed shallow now, must needs be so plowed throughout the season. Do not get into a hurry because neighbor A. or B. is bedding up for cotton, or planting corn, but "make haste slowly," carry on your operations systematically; prepare your soil well, and watch the dogwood-blossoms. The planting of a crop is a small matter, when you have everything ready, and there is not much to be gained by taking the start of "Dame Nature."

Your manure should all have been hauled out before this, if possible, and turned under. Haul out your cotton-seed intended for corn, and throw them in piles, at convenient distances—twenty to twenty-five bushels per acre will be enough—put the seed down by the side of the corn, to be covered by the plow, and be careful not to kill your seed.

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See to the selection of your seed-corn, if you have not done it, and, when ready to plant, wet it and roll it in strong lime—it is a very good preventive against the depredations of crows. The sooner you get your corn planted, when once you are ready, the better will be the stand, the easier the cultivation, and the surer the crop. Be sure to put down "kernels" enough, and to cover them judiciously—always adapting your work to the *character* of the soil, and the backwardness or forwardness of the season.

Potatoes.—The Potato crop does not occupy the position it deserves on most plantations. It should be made a part of the *field* crop, and not be lugged in among the "truck patches," to be worked at odd times, and after any fashion. It is a precious esculent, and comes nearer being meat, bread and milk, for the juveniles, than anything we can grow. Bed your potatoes as soon as the weather will permit, and prepare your ground, by deep plowing, for the reception of your "draws" at every "convenient season." There is no better manure for a potato than cotton-seed and a sprinkling of ashes or bone-dust.

Economy.—It is a wretched economy to try to do good work with a bad implement. If your plow-stocks do not run steadily and smoothly, burn them up, and try a new pattern—the sooner the better.—Fix your eye for an instant upon the "cat-head," then run it down the trace-chain, and if it does not make a right line to the point of the plow-foot, you may rest assured that you are not doing the largest amount of work at the least expenditure of power.—See that your plows clean themselves well, that the "cat-heads" and hames are right, collars comfortable, back-bands snug, plow-lines good, and bridles "throat-latched."

Keep a bottle of vinegar, with a few ounces of alum dissolved in it, at the stable, and bathe your horse's shoulders on the first appearance of tenderness. You may add a little lime or ashes to his salt, too; and if he does not slip his winter coat readily, a little sulphur may not be amiss. Grind and cut up all your food—it will be found good economy, and your horse will not only save time, but a good deal of labor, in masticating his meals. Give him plenty at night, and never disturb his morning slumbers by throwing in "a few ears of corn" to derange his stomach.

If you have drilled barley between your rows of turnips, it will come in well this month, and improve the condition of the teams wonderfully. Too much care cannot be paid to them just now—the stables should be well ventilated and well littered, and the feeding and watering as regular as clock-work.

Stock.—Your sheep, hogs and cattle must be especially cared for, while Boreas sways the sceptre.—

Don't cling to the ancient belief that a worm fence is a capital shelter against the winds of March.—Keep your hogs out of the stables and manure lots; turn them on your clover or barley lots, and give them an occasional dose of corn, soaked in lye, eop-peras, and sulphur. If you have any cases of kidney-worm, give ten grains calomel every day, for five or six days.

HILL-SIDE DITCHES.—ARE THEY BENEFICIAL IN THE END?

This is a vexed question; and, as much side-hill ditching has been practiced in the undulating and hilly regions of the cotton States, during the past dozen years, we will throw out a few ideas, in order to elicit as much information on this subject, as is available. We know that the system of side-hill ditching has many warm advocates, and that much has been written on the subject; but we must confess, that we have never seen an argument, nor an example, which, to us, was entirely satisfactory.—In a few instances, as at Fort Hill, where the hills are mere plateau elevations above the surrounding low lands, and their lines are unbroken by ravines or depressions, the system works with some plausibility, and somewhat redeems its almost universal failure, on other more impracticable locations. But these lands, and such a bold-browed hill as stretches out from Salvador's Fort, if subjected to other systems of culture, would be as well preserved as they have been by Mr. CALHOUN's side-hill ditches.

It is the cotton and corn culture of the South—an entirely clean and uninterrupted system of culture, as long as it will produce—with a light, porous soil, kept free from the binding roots of weeds, and grass, scratched—not ploughed—which causes all the evils of washing, and the wasting of *un*-real estate, by allowing its precious fertility to float off, in a solution of muddy water, down our streams to the great ocean. It is this system which makes the sad work, which gives toil and vexation to the planter, and puts the side-hill ditcher to devising more expedients than prove effectual. It, too, seams and disfigures the declivities, once so fertile, and converts their precipitous sides into barren wastes, which would require more than human effort to reclaim. Is there a remedy for all this ruin, and what is it? Have side-hill ditches proved sufficient to restrain these thunder-gust ravages? We are sufficiently honest to say, as much as we advocate improvement, we believe that all efforts, and improvements of this kind, that we have examined, have not remunerated their experimentors. The partial successes do not compensate for the more frequent failures. Where failure has occurred, the consequent destruction occasioned by the increased volume of water, is far greater than it

would have been, if left entirely untouched. When side-hill ditches break over their banks, this ruin has often proved a sad eye-sore to many who reposed great confidence in the system.

We may be asked, what we would recommend in lieu of side-hill ditches? We would simply recommend deep ploughing and level culture—when tilled—but better sow down all hill-sides in grain or grass; and, better still, never clear them up—but leave them in natural forest. If the valleys and level lands alone were cleared and enriched, as well as drained, so as to make them produce to their greatest capacity, there would be but little use for hill-sides, except for grazing or forest purposes. Left in their natural state, or covered with rich pastures, and dotted with grazing flocks and herds, the general face of the country would present far more beautiful aspects than it now does. How much more captivating would it be, to see “sheep upon a thousand hills,” than the prospect of a thousand bare hills, seamed and gullied, which now meet the eye on every hand. The only remedy which the planter can resort to, is to commence when the land is new; in fact, with its first cultivation, and establish a system of perfectly level rows. To do this, first establish a row by the aid of the planter's level, an instrument of great use in such operations. By this row five or six on each side may be formed—when at a distance of five more rows, a row must again be established by the instrument, and the field worked over by this routine, making all the rows level—no matter what undulations or shortening may occur in them. On most soils, good, honest ploughing, ten or twelve inches deep, with level culture, would answer the purpose of protection, without hill-side ditches.—But if this is not done, the hill-side drain must be resorted to, in the mode recommended by the sanguine advocates of this system.

The value of this operation, undoubtedly consists in the accuracy with which it is done. The best instrument is the plantation level, made in the following manner: Cut two strips of light stuff, one inch by three, twelve feet three inches long—put them together with a stiff girder between, three feet from the bottom, so that you have a true triangle of exactly twelve-feet sides, one of which is open. Set it upon its feet exactly level, and then, at a convenient height, attach another girder, upon which place a small spirit-level. First fasten one end of this girder with a strong wood-screw, and, by bringing the other end to a height indicating a true level, make it fast also. Reverse the feet of the rafter to prove your plane is level, and the instrument true. This instrument moved along a line will always indicate its true level. It is recommended to have one side of the level shorter than the other, by as many inches or fractions

as it is desired the ditches should have fall in twelve feet. Three inches in twelve feet will give a down grade of one hundred feet in a mile—which it is asserted is safe against ordinary washing. The rule is, the longer the ditches, the lower must be the grade towards the outlets. To insure even partial success, they must be made more than ample for even unexpected floods of water. The rows being level—the ditches on a grade, will cross many of them, and an accumulation of water in them will find its way into the ditch, and take its chances for safe conduct beyond the cultivated lands. The outlets of the ditches should always be carried into woodland or on stony points, where they will not form gullies. Make the ditches broad and round, so that the plough animals may safely and easily pass over them. Be on the alert, looking out always for prospective breakages, and repair every deficiency. No definite rules as to the distances these ditches should be placed apart, can be laid down. Hill-side ditches can only be preserved, like liberty, at the *price of eternal vigilance*. We dissuade no planter from adopting them, but must be allowed candidly to say that we never should, from the reason that the failures out-number the successes, in such a ratio, that economy in labor would always forbid our doing so. We would be glad to publish other men's experience in this vexed matter—and have written this double-sided article, only to bring out more light on the subject. *

THE UNITED STATES PATENT OFFICE REPORTS, AND GOVERNMENT IMPOSITIONS.

We have been amused, for a series of years, by the straining for notoriety which an adjunct of the Patent Office has exhibited. Mr. D. JAY BROWNE, a Yankee chicken-author, and the compiler of various other treatises of like inutility, who, by some means, has become rooted into the Agricultural Department, and, by the aid of all sorts of humbugging, seems now to have constituted himself a fixture immovable. He has pretty pictures of plants and animals engraved, to tickle the fancies of the uninitiated, and, giving large sums for this work to a few, and larger numbers of his cumbersome, nonsensical documents, to Senators and Representatives, for distribution, he manages to be let alone, as the *agricultural stipendiary* of the whole United States. What do American citizens want with engravings of Earl Liecester's cattle, when as good models of acclimated North Devons, could have been procured from the herds of GEO. PATTERSON, not thirty miles from Washington? What with punchy Ardennes horses—a breed acknowledged to be extinct in France—when the green hills of Vermont can show Morgan horses, better than they ever were? What with Peabody's prolific Hum—ah! Hautbois strawberry,

when it never produces fruit half the size of those in the brilliant picture?—which picture cost the Government *ten thousand dollars*, and Mr. Bluebottle PEABODY—not the first red cent. The newspapers say that the three named plates, printed in flaring colors—or, perhaps, more expensively colored by hand—cost the Department \$40,000. Mr. PEABODY, no doubt, received immense benefits from his portion of this favoritism, in having his humbug berry illustrated at the public expense; but who else was benefitted by it? Not a single individual; but the Department was thus made the tool and advertising medium of a designing Yankee, in foisting his *third humbug* on the agricultural world. When enterprises of benefit to the agriculturists of the United States are set on foot by the Department, and properly carried out, they are worthy of the solicitude and protection of Congress. Of such have been the exertions of the distinguished and scientific entomologist, Mr. TOWNEND GLOVER, from whose labors we have great hopes. But, after all, Mr. GLOVER has not a chance to show his researches fairly; nor does the aforesaid appropriator of other men's ideas, D. J. B., allow him any glory; for, in his contribution to the Report of 1857, on the "Insects and Diseases of the Cotton Plant," after very lucidly showing his researches, we find a kind of *Nota Bene* appendix, with the three cabalistic letters attached, running off on the excretory theories of DeCandolle, Macaire, and Gasparini, which is not only inapplicable to the subject, but incomprehensible to all but the writer, who presents a remedy for this disease, in adopting a three or four-course rotation, by alternating cotton with peas, Chinese sugar-cane, *Chufas*, (!) perhaps Indian corn. Think of this, cotton-planters; *Chufas* and *Chinese sugar-cane* for rotations! Sweet Congo grass-nuts—enough. Mr. Browne very carefully reiterates the old saying—in *totidum verbis*—"that no animal whatever can be sustained by its own excrements." Has he forgotten his countryman's economical pig-pen, which was built three stories high, and the feeding of the pig in No. 3, sufficed for his down-stairs neighbors? We find this contribution under the head of "Animals"—properly classified, it is, most undoubtedly, for there is more of D. J. B. about it than the reader cares to see.—We would be glad to see our indefatigable Government entomologist, Mr. GLOVER, let alone; for we know him to be not only a skillful, but untiring observer of nature, and his labors must result in great good to the planters, for whom he has labored. His investigations as to cotton insects, and the cure of the orange coccus in Florida, would be worth millions to the country, if they were properly published.

In the Report of 1857, p. 29, we find the follow-

ing: "In the year 1855, the Legislature of South Carolina passed an Act appropriating \$5,000 per annum for agricultural purposes in that State, and for experiments, *principally with the seeds and cuttings which may be obtained from the United States Patent Office.*" Think of this announcement, ye planters of South Carolina, who glory in the prosperity of your flourishing institution, thus to have South Carolina's liberal appropriation tucked away under the wings of the Yankee Chief Clerk of the Agricultural Department of the Patent Office.

We have been amused at the patterns of a block patch-work quilt, published in the Agricultural Report for 1857, which D. J. BROWNE most facetiously endeavors to pass off for the hexagonal sides and triangular bottom of the cell of the honey-bee. If this embraces his ideas of the work intended, he has missed the mark; for it is an impossibility to show both the sides and bottom of the cell in one drawing; and the Government draughtsmen must be more expert than common artists to be able to perform this feat. This "Honey-Bee" article is a sweet affair, without the least originality in substance, detail, or drawing, save in "the block-quilt figure"—stolen, out and out, from the great observers who have written on this interesting entomological department of natural history, and without even a reference to HUBER, KIRBY, SWAMMERDAM, SPENCE, VON SIEBOLD, DZIERZON, or any other hymenopterous worthy, who has heretofore enlightened the world on bee culture.

The introduction of the tea-plant is the last *placebo* for the dear people. A beautiful and very correct drawing, with two pages of maps, "indicating regions apparently adapted to the cultivation of the tea-plant in the United States," so covers up every man's land in the cotton and Pacific States and Territories, that we should not be surprised to see great antics cut up on this new exhibition of the tea-leaves.

But enough of this fault-finding. It is no pleasant duty to carp, even at humbuggery. If the Agricultural Department of the Patent Office was honestly and judiciously managed, it would confer great benefits on the people. But as it is, with Reports filled up with all sorts of material, from the cost of a load of compost, to the price of yearling calves and colts, in every township of our extended country, with egotistical and impracticable articles, written and dictated by the Chief Clerk, who even imposes on the Commissioner so much so as to induce him to publish a sort of JOHN LIVINGSTON biography of the chicken-author, in a party paper at Washington, there certainly can be no prospective good in the establishment. Let the Government either reform it, or abolish what may soon become a nuisance to sensible, observant people.]

THE ADVANTAGES OF USING IMPROVED IMPLEMENTS.

There is nothing which so strikes the progressive planter, as the great want of labor-saving implements amongst those who cultivate so extensively, the tilled staple crops of the South. We have but a short list—the shovel, twister and scooter-ploughs, and the universal cotton-hoe—these, and these alone, with now and then a flimsy implement in the way of a scraper, comprise the stock in trade of the stationary planter. Cotton land is to be bedded up, and what is the process? A small twister-plough, cutting a furrow slice of seven or eight inches in width, with a mule at one end and a strong negro man at the other, is the *modus operandi*. Now, would not a good turning-plow, with two mules, and the same negro, do as much work as two twisters, in a better and more economical manner? The economy of the process would simply be the saving of one ploughman. In planting corn, cotton, and wheat, the work of sowing the seed is all done by hand on our plantations. Corn planters, cotton-seed planters, and wheat drills, are all invented, and work to perfection wherever used; but who has a complete set of these nicely-adjusted labor-saving implements on his plantation? Cotton-scrappers and hilling-ploughs, for wet lands, or those subject to annual wet seasons, could be constructed, so that in scraping cotton-beds, a negro and mule, with a good implement, would do as much heavy work as half a dozen hands, with the best steel hoes; but where do we find their use systematized, and negroes properly instructed in their operations? Last season, in a State in which we plant, we saw a plough introduced in the pinch of the game, drawn by two small mules, and which was universally condemned before it was tested. It was a remarkably rainy season, and, by a single furrow, it did the work of five small ploughs, sweeping out the alleys, and throwing up high beds to the cotton-plants, in rows five feet apart, after a scraper had been first passed on either side of them. This single plough enabled a young planter, who was over-cropped, to save his entire crop, with all the disadvantages of a disastrous season; and the large amount of production by which he exceeded his neighbors, is ample evidence that the monster sweep will do on all cotton lands which require high beds. On lands which require level culture, steel-toothed cultivators, with expanding bars, to regulate them to suit the width of the rows, would supply the same deficiency, both in the culture of corn and cotton. The hand-hoe work, in the cotton crop, after it is thinned, might be almost wholly supplanted by the use of properly-constructed scrappers, which would shave off the grass and weeds on the sides of the beds,

and leave only a small line amongst the plants to be attended to.

The adoption of such implements would enable the planter to more frequently pass over his crop, and, as this practice of rapid working over is the golden rule in tilled operations, the system would be most advantageous, both in always being ahead of the grass and weeds, and in promoting the growth of the plants, by regularly stirring the top soil at short intervals. Scraping down the beds, and throwing out the middle of the rows, by the single operation of a properly-constructed steel plough, with a double mould-board, would save the planter much hard hand-labor. If the rows should be too narrow, on heavy lands, for two mules to work abreast, the patient instinct of this animal, with an hour's training, would allow them to be driven tandem; or a system of wide rows, with ample manuring, might be adopted, so that crowding in the drill would not materially affect the stated production of the land. Some of the most successful planters, who plant very large crops to the hand, have adopted wide rows, in order to lessen the hoe labor—and it is a wise principle, for it enables them to do almost the entire tillage of the crop by horse-power. We have been surprised that the horse-hoe and plough have not been more generally adopted by our seaboard cotton-planters, as those soils are usually very easily tilled. All the operations of trenching and bedding up, on marsh, the debris of the old crops, and compost manures, might be done much more cheaply and better, by properly-constructed ploughs; and why such implements are not generally used amongst them, we are unable to divine. The seeding of wheat and small grains is all done in the South by hand-sowing, and plowing in, with small scooter or shovel-ploughs—a most tedious and expensive process, when we consider that a good wheat-drill, with a driver and team, will nicely put in ten acres a day: or, for hand-sowing, the gang seed-plough, so generally in use in Virginia and Maryland, dispenses with two-thirds the labor expended on the primitive system in use amongst us.

The only thing which militates against our notions is, the difficulty in procuring the proper implements amongst us. The mechanical mind at work in the planting States, has never been centered, at any place, upon the production of cheap and substantial implements, such as are required by our systems of tillage. All the implements, outside of the line of those usually manufactured on the plantations, are patterns of those invented for other culture; and, if at all adapted, cannot be used, as the manufactories are so remote that the freight of transportation is frequently more than the prime cost.—Then, too, there is no way of repairing breakages,

except at great expense—all of which prevents the extended use of such as are manufactured elsewhere, and fitted to our wants. The turning-ploughs sent to us from the North, and on sale at our Agricultural Shops, (so-called “Warehouses,”) are such poor trash as cannot be sold at home, and, like Peter Pindar's razors, are sent abroad for a market. If we specially order good turning-ploughs, the cost of transportation, and the vexations of their being frequently out of repair, prevents us from using them to any extent, or with any satisfaction. These things are the great draw-backs, and they must be considered in pitching a crop.

How is all this to be remedied? We see no way, unless it be to foster mechanical genius amongst us, by amply patronizing such inventive mechanics as are disposed to labor in the cause of improving the implements used in cultivating the staple crops of the planting States. Let there be a great central plough-factory in every State. North Carolina now has one at Salisbury; and we see that Dr. PHILLIPS and his friends have started one in Mississippi: here, at Columbia, would be a good location for such an establishment; and Atlanta, Georgia, and Montgomery, Alabama, would be suitable places for similar establishments in those States. Let the agricultural press speak out in this matter—foster and encourage mechanical industry, when located in our midst, and when it is directed to those objects. The great cry, and the great want, in the planting States, is, a lack of labor. Let us, in part, supply that deficiency, by placing in the hands of our trained laborers implements by which, in the operations of tillage, they can prepare double the amount done under the present system: and, where all is hurry and push, we will see plenty of time to do everything, in a leisure and more perfect manner than we now observe. *

THE PLANTER'S FRIEND.—FREIGHTS ON GUANO.

It gives us great pleasure to chronicle every movement which has a tendency to benefit the agriculturists of the country, be it in legislative bodies or railroad conventions. It is the more gratifying to find men true to the great interests of the country, regardless of the petty ambitions which are usually regulated by the popular ear—men who look steadfastly to the welfare of the people, without considering whether their actions and votes will eventually have a tendency to elevate themselves to some exalted position in the gift of the dear people. The general legislation of the country, now, has an eye to President, Governor, and Senator-making—and is so interesting in its details and manoeuvres, that it engages the labor and life of our broad-shected friends, the newspapers of the day, and to these industrious workers we leave the management of all such affairs.

Politicians are not of us, nor for us, and, being like Dame Quickley's man—"neither fish nor flesh"—we know not where to have them.

We are induced to make these remarks, upon being reminded of the eminent services rendered to the agriculturists of the country by the watchful attention of the Hon. SAM'L McALILEY, of Chester, both in the Legislature and in the recent Convention of the Stockholders of the Charlotte and South Carolina Railroad. Mr. McALILEY, years ago, introduced the first restrictive stipulation in regard to freights on Guano, &c., which was adopted by the Legislature, in reference to the charges on such articles, on the South Carolina Railroad. We now find him again on the watch, a faithful sentinel, guarding the best interests of our impoverished land—restraining and curbing, by every means in his power, the exactions of our railroad corporations, in such a manner that a true policy of reciprocal benefit is adopted.

"Mr. S. McAliley offered the following resolution:

"Resolved, That the freight on guano on the Charlotte and South Carolina Railroad shall not exceed eight cents per one hundred pounds.

"Mr. McAliley stated that his reason for offering the resolution, was in consequence of what passed during the recent session of the South Carolina Legislature. The South Carolina Railroad had made an application for an amendment to their charter, touching the bridge over the Wateree River. He had suggested the above rate to the South Carolina Railroad Company at that time, and had promised that the freight should be the same on the Charlotte and South Carolina Railroad route. He offered the resolution, therefore, for fixing the rate, so that the South Carolina Railroad Company might have full evidence of what was their charge for this kind of freight, and thus it might induce that company to reduce its charges to the same level. The charge now made was twelve cents per one hundred pounds.

"Mr. W. R. Robertson, of Winnsboro', suggested that the freight ought to be proportioned to the distance, and that as Winnsboro' was only one-half, it ought to be but four cents.

"Mr. McAliley said there was another consideration, that although the charge was the same from all points on the Charlotte and South Carolina Railroad, yet this course was justified, because, if one hundred pounds of guano produced two hundred pounds of lint cotton, the down freight on that from Charlotte, would be eighty cents, and from Winnsboro' would be thirty cents. The road would be benefited by the increased freight.

"On motion of Mr. W. R. Robertson, the resolution was unanimously adopted."

This is what we call fostering the agricultural interests of the land. We thank the liberal spirit of the stockholders who *unanimously* adopted the resolution, as much as we do "The Planter's Friend," who introduced it. What say our friends of the Greenville, the Spartanburg, the Wilmington and Manchester, the South Carolina and the North-Eastern Railroad Companies, with their various branches and connections, to following up the good move, and

by their liberality induce the free use of concentrated manures throughout the regions which they penetrate?

A liberal course of procedure in this matter, would make adequate returns in the increased crops to be transported on their lines of road, and it would require no longer a period than a single season of production, to reimburse them for the seeming losses from a reduction of such freights. Planters do not buy guano to theorize on, but to produce staple marketable crops of wheat, corn, and cotton, and the extended use of this fertilizer is certain to pay in the great increase of articles raised for exportation. It would have been well if salt, when used as manure, plaster, and the various compounds of super-phosphate of lime, were put upon the same footing.

It is a pleasure for us to call public attention to a faithful friend of agriculture, discharging his duty to the people, and it is also a pleasant duty to point out to the liberal gentlemen controlling the various railroad companies, an avenue through which they can vastly benefit those who contribute the greatest amount of their patronage. *

THE DESTRUCTION OF FORESTS, AND ITS INFLUENCE UPON CLIMATE AND AGRICULTURE.

We would call the attention of our readers to a very suggestive article on the above interesting subject, clipped from that capital journal, *the Valley Farmer*.

The organ of destructiveness seems to be predominant on the American head, and, be the country old or new, he seems to feel as if his destiny was to fell the forest, and lay waste everything in his path.—When timid legislators begin to talk about fence laws, and old fogies about the scarcity of timber, and the expense of cross-fences, it is manifest that the importance of preserving the little we have left, and re-foresting the old fields, is beginning to be felt.

We are pleased to see that the Executive Committee have, in the premium list for the next Fair, offered a premium for "the best essay on re-foresting the country." Where trees grow so rapidly as they do in our climate, such a thing would not seem difficult. Nature is ever fruitful in expedients for her own preservation, as well as the restoration of her wasted energies, as every fence-corner and bird-haunt will indicate: but man is too busy, in his onward rush to the goal, to mark her simple suggestions.

"The rapid destruction of the forests, in this country, affords a subject for the serious consideration of reflecting men. That the effect upon the climate and products of the country, in consequence, are most marked and serious, no one qualified to fully investigate the subject, we think, will deny.—

The exhaustion of the timber from our noble, native forests, it is true, to a very great extent, is the legitimate consequence of the rapid settlement of our country. But, in addition to this, there is, to a very alarming degree, a most injudicious, and, we say, a wanton waste of timber throughout the newly settled portions of the country. Reckless and ignorant, many of the new settlers enter upon their tracts of virgin land, and the first step is to commence a "clearing," and with this view, an indiscriminate warfare upon the majestic trees is made—as well upon the site selected for the "cabin," as for the field. Many of these trees, if they could now be restored around the homesteads of those who have since become the purchasers, possessing more highly cultivated tastes, and a correct appreciation of their real value, would readily be worth the original cost of a dozen acres of land. But, however much these trees would add to the beauty and comfort of the homestead, it is not our purpose at this time to discuss their value in this particular, but to allude to the subject in its more general bearing upon the climate and agricultural products of the country at large.

It may, in truth, be said that the forest is the parent of rivers. It is too well known to many, even in this new, Western country, that thousands of streams that once afforded sufficient motive power to propel grist and saw mills, in the early settlement of the country, have now either become wholly dried up, or the flow of water so uncertain, and confined only to so small a portion of the year, as to be worthless for this purpose. The falling off in the supply of water, from these small streams, produces a marked effect upon the rivulets, which go to make up the volume of water of the mighty rivers, and instead of a more regular flow of water, suited to the constant navigation of these rivers, as in early times, it descends in periodical and calamitous floods, such as have recently occurred in France, and upon the shores of the lower Mississippi. This unequal flow of water may be traced to the loss of the native forests. A soil covered with trees admits of much less evaporation from the surface than when open and exposed to the direct influence of the sun and winds. This fact is clear to the understanding of those who have traveled a short time after a rainy season, on roads through a thickly wooded country, and on those that are free from forests. Those roads that traverse the wooded districts are wet, muddy, and frequently hardly passable, while those which pass over a cleared country are found dry and hard. In forests, the humidity is constant, with slight variations; while in the cleared districts, the evaporation is rapid, the earth often becoming parched and arid. Besides the increased evaporation caused by such a general clearing of the timber of the country, and the consequent effect upon the streams and rivers, there is another cause that tends to increase the irregular flow of water, and that is the open condition of the soil produced by cultivation. The breaking of the surface of the country with the plow, renders it capable of absorbing a much greater quantity of water, during rains in Summer, and prevents it from running into the streams, as it would otherwise do from an unbroken surface, or from a surface frozen, as in Winter. It may be questioned by some, whether the clearing away of forests actually diminishes the quantity of rain that would otherwise fall. If the quantity be

not diminished, it cannot be doubted that its fall is in consequence rendered more irregular and uncertain, at that season of the year when it is most needed by vegetation. We believe it is a fact that rain, in the heat of Summer, is less frequent over extensive prairies, than in those portions of country more uniformly timbered. In the timbered country, the rains fall more regularly throughout the year, while in the open country, the seasons are assuming more of the character of *wet* and *dry*—the rain falling more in Winter and Spring, and the dry season prevails in the heat of Summer, when vegetation should be making its most rapid growth, and when the exhaustion of moisture by growing crops is the most rapid.

Besides the effect produced upon the clouds and rain of the country, by the removal of the forests, another and more marked influence is produced upon the temperature. It is clearly apparent, that our Winters are becoming colder and our Summers hotter, than was the case formerly, and this result is favored by the position and range of the two great dividing chains of mountains that bound the Mississippi valley. This is attested by the intense cold that has of late attended our Winters in the West, and particularly that of 1855, when a degree of cold, extending from high latitudes, in a direction from North-West to South-East, over the States of Illinois, Missouri, Kentucky, Tennessee, and on to the Atlantic ocean, was experienced, which our first settlers had no conception of; and our Summers, of late, are marked by the opposite extreme.

It is proved, by annual statistics, that the wheat crop of the older States, and even of Ohio, and some of the Western States, is gradually diminishing in its acreable product. This has been attributed by some agricultural writers to a loss of fertility, by injudicious cropping. This has, in part, no doubt, tended to produce this result, but much of the falling off is owing to the absence of snow, and the killing of the wheat plants by the sudden alternations from heat to cold, during Winter and Spring. But the change on the fruits of the country, such as apples and peaches, is still more striking. Within the memory of some of the earliest settlers, now living, peach trees continued from thirty to forty years, vigorous and fruitful, while now it is difficult to maintain them long enough to secure enough fruit to pay for planting them. Apples, too, have become a very uncertain crop. The fruit and trees both are liable to various diseases entirely unknown to the early settlers. We think it is not a difficult matter to trace these evils to a change of climate, and that change is mainly attributable to the removal of the native forests.

Without a more clear solution of this question, some of our readers may be induced to doubt the full force of the influence we attribute to this cause. To make the matter more clear, we will state, that forests protect the earth from the effects of severe frosts. It is well known that frosts never penetrate so deeply into the earth, in forests and their immediate vicinity, as in the open fields. This results partly from the annual covering of leaves that fall from the trees, and from the protection the trees afford against the action of the winds, and partly from their preserving a more steady and uniform depth of snow, while all combined exert a still greater influence, in checking the radiation of heat from the earth.—Hence, the greater amount of forest in a country,

the greater the protection. Hence, also, even a small number of trees, scattered through fields, and along roads and fences, will, by checking the force of the winds, contribute, in some measure, to the same effect. And how easily might the number of such be multiplied, and how much more easily might thousands have been saved, in these situations, not only without injury to the farmer, but even to his advantage, as well as to the great beauty and adornment of the country.

Again, forests modify the intense heat of the Summer air, by evaporation from the leaves. Plants and trees absorb moisture from the earth, much of which, incapable of being appropriated to their use, is thrown off by their leaves. Their leaves are their organ of respiration, and, by imparting moisture to the atmosphere, they mitigate its intensity, and tend to equalize its temperature. We have a familiar illustration of this in the cooling of the air in our rooms in hot weather, by sprinkling water upon the floor. Hence, even scattering trees will contribute their proportion to the same effect. This is evident from the fact that orchards are cooler than naked fields, an effect attributable not wholly to the shade, but in part, also, to the moisture thrown off by their leaves. Hence the difficulty of drying hay in orchards.

Another fact, to which we have before slightly alluded, is this: that more water falls in wooded countries than in those that are divested of their forests. This, together with the protection which the forests afford against evaporation from the surface of the earth, and their influence in checking the violence and effect of the winds, even in Summer, operates to prevent severe droughts, and, consequently, the drying up of the streams and springs. It may also be remarked, that the failure of these in time diminishes the quantity of water raised by evaporation from the earth, and thus tends to promote drought.

That trees perform an important part in producing rain, we think will be fully admitted by all who have given the subject their attention. In the August number of the *Valley Farmer* for 1858, we said something upon the subject of the laws that produce and govern the fall of rain. When the air is saturated with moisture in the form of vapor, and when two clouds of unequal temperatures unite, the vapor will be condensed, and rain is the result. So, also, any local object, connected with the earth, that has a tendency to suddenly cool the atmosphere, will produce rain. Electricity, which performs a most important part in the various departments of the phenomena of nature, is also an important agent in the production of rain, for it has been clearly demonstrated in the laboratory, that the air, when most fully charged with electricity, is capable of holding the greatest amount of moisture; and the greater the degree of heat, and consequent evaporation, the larger quantity of the electric fluid is generated.—The large quantity of electricity that is generated by the immense amount of water evaporated daily, ascends with the vapor, and is retained in the regions of the clouds. The upper stratum of the air thus becomes highly charged, and is capable of holding much moisture.

Now, if the temperature of a cloud is suddenly lowered, or its electricity removed, its hygrometrical capacity will be greatly diminished, and the superabundant water precipitated in heavy showers to

the earth. When two clouds approach each other, unequally charged with electricity, or, as Franklin termed it, the one positively, and the other negatively charged, the equilibrium will be restored between them, and usually a clap of thunder will follow, succeeded by a shower of rain from the one positively charged, and whose electrical condition has been so instantaneously lowered. Clouds overcharged with electricity, not only part with a portion of it, to the other clouds, negatively charged, but the electric fluid will seek an equilibrium in the earth, through the agency of any projecting points, from its surface, and this is not confined to the few lightning-conductors placed upon our dwellings and out-houses, but through forest or other green trees, for which their numerous upright branches and pointed leaves admirably adapt them. This generally occurs silently, as in the case of a good metallic conductor, but sometimes, owing to the condition of the intermediate space through which the fluid has to pass, an explosion takes place, and the tree is riven with great force from top to bottom. In this we see the importance of forests in the production of rain. In seasons of extreme drought, how frequently is it observed upon our prairies, that cloud after cloud will arise and pass over without rain.—In such cases, the lower stratum of air becomes dry and acts as a non-conductor, and prevents the escape of electricity to the earth. But when the clouds approach a forest, which is surrounded with a lower and more humid atmosphere, and with the innumerable branches and leaves reaching towards the clouds, and gradually drawing off the electricity to the earth, they can no longer retain their moisture, but send it forth in refreshing showers upon the neighboring fields. The shade from forest-trees not only keeps the earth and air around them moist, by their coolness, and thereby preventing drought and keeping up a more copious deposit of dews, on surrounding fields, but also affords a constant supply of water for innumerable streams, which irrigate the soil of the valleys through which they flow, as they pass on to swell the tide of the larger rivers below. From these facts it is clear that the general destruction of forests would impoverish the country, while the extra amount of land for cultivation could not compensate for the loss of trees. Our seasons of floods and droughts would be more marked and disastrous, while the wind would have a clear sweep over the country, rendering our Winters more severe, and our Summers would become hotter as they became dryer.

The immense consumption of wood by our railroads, is making rapid inroads upon the forests of the country, and this will continue until the advanced price of wood renders the use of coal more economical. It is not the necessary consumption of wood that leads us to the discussion of this subject, but the lack of judgment, in the indiscriminate waste of timber, by thousands of the settlers of new countries, as well as in the older States.—And this destructive policy is pursued by many with equal recklessness in the groves among the Western prairies, as by the settlers in the timbered country.

In our next number we shall pursue this subject further, and show the disastrous consequences which have resulted from the loss of forests in some of the old counties of Europe, and upon the islands of the ocean.

Gorticultural and Pomological.

WILLIAM SUMMER, EDITOR.

WORK FOR THE MONTH.

The mild days of genial Spring should urge us to be up and doing. See that you have planted all the varieties of vegetables necessary for your table; and, if you have neglected to provide for the proper seeds, lose no time in procuring them. Early varieties of *Peas* may still be sown, and succeed very well, if the ground is carefully prepared. The Imperial, Prussian, Knight's Tall Marrowfat, and new Mammoth, are excellent late sorts, and should be planted now. The last two are of a rich, buttery flavor, and are not equalled by any others; their height is the only objection to their culture. They will require stakes six or seven feet high.

Beans.—The best early varieties should be planted as soon as possible. The early Valentine, or red speckled Marrow, is one of the best, though there is only one variety of this that is worthy of cultivation—a pale red bean, with white specks; this is smooth to the touch, tender, and good when cooked. Most of the beans grown by Northern seeds-men are rough, and of insipid flavor, here. The white Bush Bean, the Sink String—a white bean with strings sunk in deeply—the white Cabbage—are three varieties which can be recommended as worthy of a place in every garden, having all the requisites that a good bean should have—being tender, sweet, and well flavored. The Drought Bean, in shape and color, resembling the Rob Roy Bean—distributed from the Patent Office this season—is also an excellent variety, having all the good properties of the others. It withstands dry weather better than any other, remaining tender and fit for cooking to a late period. To these we would add the Locust bean, a very large and productive variety, producing large broad beans, in clusters—the seeds are brown, the only objection to it. The late White Corn bean is valuable to keep up a succession. For Beans, a strong soil is decidedly best; but be careful that the soil is not too wet when it is worked. The bed should be well manured, and deeply dug, raked finely, and laid off in drills, three feet apart; the beans planted four inches in the drill, covering them one inch deep. When they are up, and have three leaves, stir the earth around them, and give them repeated workings, as they require it. We have found super-phosphate of lime the best preparation we have used for Beans, Peas, and for other garden vegetables. It is safe, and easily applied, and a supply should always be on hand.

The last of this month, or early in the next, plant
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Lima and Carolina Seivee Beans. They require rich, strong soil, though, with super-phosphate of lime, they may be grown on any good soil. Plant in rows, four feet apart, and place the beans from six to eight inches apart in the drill—taking the precaution to place the eyes downwards, and the narrow end the lowest, as the bean always rises from the ground in that position; and, if not planted right, it has to turn itself over in the soil; and if obstructed, it invariably rots in the ground. With this precaution, they come up sooner, and more evenly. Cover about one and a half inches deep.—They require stakes eight feet high; but the best method is, to make an upright lattice at a suitable place in the garden, and train the vines against this.

The *Carolina*, or *Seivee*.—This is the well-known butter-bean of the country; and, from being acclimated, is hardier, and usually a more abundant bearer; and, though much smaller, and not quite so rich as the Lima, is, for general culture, the best running bean for our climate. The Scarlet Runners, and London Horticultural, are of this class, but are poor bearers, and not worthy of culture.

Borecole.—The Curled Borecole, or Scotch Kail, is a species of Cabbage, with finely-curled or fringed leaves. It is known, also, as German Greens, which is a tall variety, and may be sown in Autumn for early Spring greens. Scotch Kail is excellent after frost has fallen.

Broccoli.—This is a variety of Cabbage that produces, in Autumn and Winter, a fine head, with its leaves, that is considered by many equal to cauliflower; and, in some varieties, cannot be readily distinguished from it. The Early Purple, the White Cape, and the Purple Cape, are some of the best.—Sow the seed this month, and transplant when large enough, in very rich ground.

Brussels Sprouts.—A variety of Cabbage, producing, in the latter part of the season, a quantity of small heads, about the size of Walnuts, all over the stem of the plants. They are sown and managed the same as the Cabbage.

Cauliflower.—Sow this month to produce heads in Autumn—treated generally like the Cabbage. When the plants are large enough, transplant them, three feet apart, in a very rich and rather moist loam; a rich soil is indispensable for their successful culture. In order to blanch them handsomely, the leaves must be closed together at the top, and tied gently. This delicious vegetable, as well as Broccoli, is deserving of more general cultivation.

Cabbage.—In addition to the varieties named last month, there is a new favorite, the Winningstadt, an excellent early variety, of quick growth, and large, compact heads. The plants should be dusted over with wood ashes, slacked lime, or Scotch snuff.

All, or either, mixed with a little fine sulphur, will keep off the *black fly*, so destructive to young plants.

Curled, or Pepper Cress.—This is one of the best small salads, and should be sown thickly in shallow drills two inches apart. The ground should be made rich, raked fine, and smooth. Cut it close to the soil when it is an inch high.

Corn.—For table use there are several extra early sorts. The sugar varieties are very liable to be eaten up by worms. Adam's Extra Early is one of the best. Plant every two weeks, for a succession.

Cucumbers.—Plant now for the general crop, in ground well prepared, made light and rich.

Okra.—Sow the seed in rich ground, thinly, in drills three feet apart; thin out to one foot from plant to plant. The long white is the best variety—tender and excellent. We would recommend a small patch of this wholesome vegetable to be planted on every plantation.

Squashes should be planted this month. The large Early Bush Squash is the best for garden culture. Cultivate them in the same way as Cucumbers, but in a portion of the garden as far removed from them as possible.

Parsnips and Carrots, for the general crop, should be sown this month.

Radishes.—Continue to sow the Spring varieties every three weeks, for a succession.

Melongena, or Guinea Squash.—Sow this month.—If you have had the advantage of a hot-bed, the plants will be fit to set out next month.

Beets.—The principal crop should be sown this month, and the ground deeply trenched, particularly for the Long Blood Beet. The turnip Beet, and the Bassano—a fine variety—will succeed with less careful preparation; but remember the old adage—"whatever is worth doing, is worth being done well."

Swiss Chard.—This is a variety of the Beet, and should be cultivated in the same manner. It is an excellent vegetable, and is worthy of more general cultivation. It produces numerous large, succulent leaves, which have a solid mid-rib running along the middle; the leafy part being slipped off, is boiled like spinach, and the rib and stalk are dressed like asparagus. They have a pleasant, sweet taste, and are considered more wholesome than the Cabbage tribe. It forms an excellent and abundant food for milk cows.

Strawberry beds early, and thinned out to produce good crops. The Boston Pine is a variety that will not succeed without this attention.

Spare no labor on the garden this month, and you will be richly repaid, in an abundant supply of wholesome vegetables for the table.

NEW AND RARE TREES OF MEXICO.

We have been looking in vain for the introduction of the fine trees and new plants and shrubs which abound in the various latitudes of Mexico, many of which would find a location and climate suited to their *habitat* on our Southern mountains, along our sea-coasts, on the peninsula of Florida, and on the shores of the Gulf of Mexico, and far up the Mississippi.

A botanicaal explorer, M. ROEHL, who is now in Mexico, has made us acquainted with many strange varieties, worthy the attention of the tree-fancier.—His discovery of the *Abies glaucescens*, with foliage whiter than the Deodar Cedar, will no doubt introduce to us a rigid rival to the famous Himalayan favorite.

Amongst the Cupressidæ, KLOTCH discovered *C. Lindleyi*; ENDLICHER, *C. Benthami*; and GORDON, *C. Uhdeana*. Another magnificent tree of Mexico, allied to this family, is the *Taxodium distichum Mexicana*, of RICHARDSON, which presents, near Oajaca, the colossus of this genus. This specimen is perfectly sound, not the least hollow or decay being visible about the trunk, which is about the same size for twenty feet from the ground—its diameter being fifty feet ten inches. The height of this tree is not in proportion to its thickness—the top quite regular, and graced with spreading branches to the distance of nearly sixty feet—so that its shadow, with a vertical sun, covers a circumference of five hundred and twenty-five feet. This is the Falstaff of trees.

Amongst the Juniperidæ, is found *Juniperus Mexicana*, a beautiful tree, now somewhat introduced amongst us, *J. flaccida*, *J. gracilis*, and a new variety, of M. ROEHL's discovery, *J. gigantea*. Mexico also boasts of a new *Podocarpus*—a magnificent tree, one hundred and thirty feet high, with leaves six inches long, and half an inch wide; and also a new congener, *Turga Lindleyana*.

Mexico is rich in the *Pinus*; for of this genus there are no less than fourteen groups, embracing over one hundred distinct varieties. The 1st group: long leaves, quinate; elongated cones—31 varieties. 2d group: leaves quinate, stiff, erect, sometimes very long; cones oval, and of moderate size—11 varieties. 3d group: leaves ternate, stiff, flat, rather short; cones small, and almost conical. Trees rather twisted, but excellent wood; when felled, they stool from the root, or from the stump, and form handsome clumps of bushes—4 varieties. 4th group: leaves quinate, small glaucous; cones small, orbicular, and pointed—10 varieties. 5th group: leaves long, drooping, ocrea whitish, cones of moderate size—4 varieties. 6th group: leaves quinate, long; cones moderate; apophysis irregular; edges thick—5 varieties. 7th group: leaves quinate, long; cones

very large, wide at the base, and perfectly conical—3 varieties. 8th group: leaves quinate, long; apophysis and protuberances very prominent—5 varieties. 9th group: leaves long, quinate; cones very long. 6 varieties of this species were discovered, in 1857, by M. ROEHL, and are the most extraordinary of all the pines, with a straight trunk, from 60 to 80 feet high, leaves from 18 to 20 inches in length, drooping, of a dull green; cones 10 inches long, and from 2 to 3 inches wide, curved. His varieties are named *P. Magnifica*, *P. Ocampii*, *P. Zitacuara*, *P. Nitida*, *P. Verschaffeltii*, and *P. Ne Plus Ultra*.—Another similar variety, *P. Chalmaensis*, M. ROEHL thinks is of the same species, with cones and leaves rather smaller, but equally fine and graceful, and of the same *habitat*, near Malinalco. 10th group: leaves quinate, long; cones long; apophysis very large—1 variety,—newly discovered by M. ROEHL,—and named *Pinus Regeliana*. 11th group: leaves ternate, stiff; cones ovoid, of a dark violet; trees very resinous; *habitat* at an elevation of 13,000 and 14,000 feet—7 varieties, all discovered by M. ROEHL. 12th group: strobilus section, leaves generally quinate, short, very fine, glaucous; cones long and large; terminal protuberance; wood of a superior and highly esteemed kind. This group numbers 8 varieties, all discovered by M. ROEHL except *P. Ayacahuate*, of EHRENBURG; the most remarkable of which are *P. Bonaparteana* and *P. Durangensis*, which are from the Department of Durango. *P. Bonaparteana* is there called *Pino Real* (Royal Pine), on account of its majestic aspect and colossal dimensions. A resinous substance obtained from this tree is used for food, being very sweet and grateful to the palate. The *habitat* of these two specimens being very cold, they will be altogether hardy in the temperate regions of the United States. In the same group are two others, equally hardy, *P. Popocatepetlii* and *P. Veitchii*. 13th group: Tæda tribe—leaves ternate; scales of cone strongly adherent—1 variety—*P. Patula*, (Schied. et Depp.,) *Fountain Pine*, or *widespreading Mexican Pine*, recently illustrated in the *American Agriculturist*, and taken from Sargent's forthcoming new edition of Downing's *Landscape Gardening*. It would be entirely hardy in the Southern States; and we quote Mr. Sargent's words, who, describing it, says: "Of all the pines which I have ever seen, this is, beyond measure, the most graceful and charming—not only in its growth and habit, but in the softness and color of its leaves. It resembles a beautiful delicate green fountain of glass, and has a parti-color like that of silk, which catches the sun like the kaleidoscope. The leaves resemble the silk of Indian corn, being similarly soft and delicate, and not unlike it in color." 14th group: Pinæa tribe—leaves generally very short; cones

small, obtuse; seeds large, wingless, edible—3 varieties—*P. Llaveana* (Schied.), *P. Cembroides* (Gord.), *P. Fertilis* (Roezl).

All these beautiful trees might be procured and naturalized in some portions of our country. Many of them are of great utility—most of them of rare beauty—and all would be acquisitions to our botanical collections.

We shall resume the enumeration of other novelties in Mexico, in a future paper. The Palms, deciduous trees, and indigenous fruits of Mexico, furnish great attractions to our tropical neighbors of Florida, where many of them would thrive. The plants and ornamental shrubbery, too, are rich in variety and beauty. *

DEATH OF DR. TOGNO.

We regret to announce the death of this zealous and devoted Horticulturist, which occurred at Abbeville, on the 5th of February last. Dr. Togno had spent much of his time and means in the encouragement of grape culture in the South. Our readers have not forgotten the admirable article in the February number; and he had commenced a series of articles on the vine, which would have been both instructive and useful to the people of his adopted State. He had arrived at the ripe age of upwards of three-score years, and was suddenly cut off by apoplexy, without previous indisposition. A native of Corsica, he removed at an early period of his youth to this country, and at different times was connected with educational, scientific, and literary enterprises. At the time of his death, he was vigorously prosecuting the operations of a model vineyard near Abbeville; where he had erected suitable buildings, cellars, &c., and gathered many of the varieties of his favorite plant.

FINE POMOLOGICAL DISPLAY.

The Unionville, S. C., Pomological Society had a very successful exhibition of Winter fruits on Sale-day of February, at the town of Unionville. Col. D. JOHNSON, the President, says:

The specimens of Winter Apples exhibited fully justified the belief that in old Union there existed fruit of unsurpassed excellence—for size, flavor and good keeping qualities—and affords the most convincing proof that, were our people so minded, they could find at their own doors a soil and climate that would produce fruit equal in all these qualities to any that could be found in any portion of the globe—and thus might secure to themselves, not only the pleasure of possessing them for their own use, but find in them a source of great profit. There are thousands of acres at the North and in Europe, devoted to this culture, and no crop pays better. Then why not turn our attention to this matter? No people in the wide world are better situated for it—and now that the iron-horse stands ready harnessed to

bear it off to a market that cannot be glutted, we stand without excuse.

Capt. Dunn bore off the prize. It is due, however, to the less fortunate competitors to say, that his fruit possessed the great advantage of having been better taken care of, as the Captain himself frankly admitted. His method is to pack them away in thoroughly dry sand, disposed in layers, so as to prevent all contact between the apples. His were as sound, plump, and fresh in taste as when plucked from the tree.

List of apples exhibited on last sale-day:

THOMAS ISON—Quaker Greening; Winter Red.—J. D. GIST—Prior; Gully. REUBEN CHICK—Romanite. WM. C. DUNN—Willow Twig, best; Lady Apples, second best; Hugh's Crab; Lemon Pippin; Elliot Crab. D. JOHNSON—Foust; Hall; Newark Pippin; Red English Crab; Long Stem; Greening; Allums; Meadow Woods. J. E. HIX—Several fine varieties, names unknown.

WILD SCUPPERNONG GRAPES, &c.

In the following, which we clip from the February *Southern Cultivator*, we recognise the initials of an old friend, Dr. JOEL ERSKINE PEARSON, of Vienna, Alabama, a devoted advocate of horticultural pursuits, and good authority; springing, as he does, from a stock which for generations has kept alive fine rural taste in their families. We know of several instances of the Wild Scuppernong—one in the neighborhood of Dr. PEARSON, in Fairfield, where a solitary vine has grown and flourished for years past.—At another location, "The Rock House," near Lexington C. H., S. C., there are large numbers of indigenous White Scuppernong vines growing in a state of nature; and the lamented Dr. GEO. BATTEY, of Georgia, informed us of a similar locality in Columbia county, Georgia. We consider the White Scuppernong the offspring of the *Common Bullace*, (*Vitis rotundifolia*), being sustained in this opinion by the facts, that a large number of the seedlings of this grape are black. All the seedlings of one of the finest vines in the South, at the residence of Mrs. PICKENS, Alabama, are black. This vine covers more than one acre of land, and produces immense crops. A regular addition of Cedar trellis is provided annually for its extending growth. Col. C. P. CRAWFORD, of Blakely, Georgia, has also sent us a superior Black Scuppernong, springing from the White. The "Fore Grape," in the Eastern part of our own State, is a black Scuppernong. We have now in course of propagation, a stock of White Scuppernong vines, from the original location from whence all the cultivated sorts have been derived. We believe that, for the man who grows vines slip-shod, without system, the Scuppernong is best of all the grapes, as it requires only something to run on, trellis, trees, or rocks, and no pruning, and bearing as certainly as any other fruit.

Dr. PEARSON's experience with "*Ohio Apple*

Grafters," has been felt by a great many Southern men, and the developments of the growth of their grafts will awaken many more to unpleasant convictions of being *gulled* by these impostors, who rank, in the scale of *humbug*, next to venders of wooden nutmegs, &c. As to their charges: We know a gentleman who paid \$25.00 for the grafts inserted in a vigorous old tree—a pretty dear price for trash, warranted to grow—when we would have furnished him one hundred trees, undoubted, and suited to the climate, for the same sum.—ED.

"I have been trying for a term of years to promote the cultivation of fruit and ornamental trees, and have given all my leisure to this object and horticultural improvement. Living in a low, flat country, we suffer exceedingly from late frosts.—All my experiments inculcate the idea that *Northern fruits* will not succeed in this latitude. A few years ago I got some Ohio men to graft my apple-trees.—They were very expert in the business—cut up my trees—filled them full of *best* grafts from Ohio.—Half of the trees were so much mutilated that they died, and the rest, which live and bear fruit, never bring an apple to perfection. By the time they are grown they rot and fall off, or dry up on the boughs. They did not lack, either, in expertness in charging. This experiment satisfied me. As the old saying is, "a burned child dreads the fire." In future I expect my supplies from the South. The Tennessee trees do pretty well here; those from North Alabama also. I have a lot, obtained from the vicinity of Yazoo city, which came highly recommended, but are as yet to be tested. I have the nucleus of a vineyard: all my varieties have failed the last two years, except the Scuppernong, which, this year in particular, has exceeded all expectations. I have found this variety growing luxuriantly in the low land of Sipsey river. There appears to be two parent vines, which, from size and appearance, must be quite antiquated; from these seedlings some white, some black, are scattered all around in the vicinity. These originals must have existed here from a remote period—to which time the "memory of man runneth not back." How they came here no one can divine; perhaps the seed was deposited by the woodpecker, in his annual migration South, and brought from the Roanoke. We know by experience that they are very fond of the fruit, and may have scattered the seed in their telegraphic flights in quest of isothermal comfort. It is true that our country is settled up with North Carolinians, but none so old as these vines; and, strange to say, none of them are impressed with the ideas of the *utile et dulce*. Therefore, the advent of these strangers could not be attributed to them."

DRYING OFF COWS.—As the season approaches when most of our dairy cows are dried up, we would call attention to the well-known necessity of removing all the milk from the udder, at the end of the time. Obstructions in the udder and teats often arise the next season from a neglect of this precaution. In regard to the length of time the cow should remain dry, we think the calves are better if this is allowed for several months, but to develop the highest milking qualities a less time is required. Much depends upon the training of the heifer. Therefore, for dairy cows, we would feed well and milk late.

For the Farmer and Planter.

ALL IS NOT GOLD THAT GLITTERS.

MR. EDITOR:—I take the liberty of asking you to publish the enclosed article on "Frauds and Mistakes of Nurserymen," clipped from the *American Agriculturist*.

Many persons will remember the fellow from Ohio who traversed the country a few years ago, with his big iron-grey horse, with a traveling-case slung across his saddle, containing the most luscious-looking fruits stowed away so snugly in the cosiest little cells—how he was afterwards followed up by an oily-tongued set of brother chips, with the cuttings of these same luscious fruits—how they cut the trees to smash, and grafted in their "pins," warranting all to take, and to prove incomparable—how they cheated everybody in counting, and how nine trees out of ten, when they bore fruit, it was, nine times out of ten, worthless—the variety generally depending upon the character of the last orchard they left. It is a most mistaken policy to run risks about fruit-trees. I have tried it. I have bought trees brought to my door, because they were cheap—thinking it wasn't much—I couldn't be hurt by it; but, after nursing them for years, having just the same trouble with them, to find the fruit worthless, or the tree unhealthy, because it proved to be grafted on a sucker. I became convinced I had "paid too much for my whistle."

It is the opinion of all Southern fruit-growers, who have experimented extensively, that we should, in the selection of our fruits, confine ourselves, as nearly as possible, to the cotton belt. Northern fruits have never improved by coming South—and the trees are rarely ever thrifty or long-lived. Nor is this the worst of it—by the introduction of Northern trees, we introduce all the varieties of insects which are rapidly destroying the profits and pleasure of fruit-culture at the North. There are a hundred insects found every year attacking our fruit-trees and fruits, that were unknown to the country twenty years ago. Let us stick to our own latitude, let us patronize our own nursery-men, and let us hunt up every seedling "to the manor born," which has merit, and introduce it. I am satisfied, by experiment, that as good apples can be found in the upper part of South Carolina, and as good keepers, too, as any one would desire. I have seen seedling peaches almost as early, and quite as good, as the Tillotson; and peaches in October better than any of the Northern late varieties.

FRAUDS AND MISTAKES OF NURSERY-MEN.

Not a season passes, in which we do not hear complaints of trickery or gross errors committed by vendors of trees. Says one man: "I ordered five Rebecca grapes of —, paying fancy prices for them,

and, after waiting two years for the little starvelings to show their first cluster, they turned out to be the second rate Clinton grape." And another: "I ordered a lot of first class cherry-trees, apples and pears, and ornamental trees, from a distant nursery, and on receiving them by express, I found nearly half of them dried up, the limbs broken, the roots, in taking them up, had been chopped off within a few inches of the trunk, and altogether they were a sorry sight. When the cherries came into bearing, part of them proved to be only bitter little mazzards; the apples, many of them, were untrue to their names, and the ornamental trees were a long time in becoming ornamental." Such occurrences are so frequent, that some persons have come to regard nursery-men as a set of sharpers, and many are so afraid of imposition that they go to the trouble of raising their own seedlings, and grafting and budding their own fruit.

Undoubtedly, there are dishonest nursery-men, as well as dishonest men in other callings. With them, indeed, there is a strong temptation to defraud, in that the gain is immediate, and the dishonesty cannot generally be detected under several years.—*Tree-peddlers* are more likely to be ensnared by this temptation than established nursery-men, whose success in business depends upon careful and faithful dealing, and is sure to follow it. There is not so much dishonesty among nursery-men as is sometimes supposed. What are often called frauds, are only mistakes, which they regret, and in most cases will try to make good. These mistakes often occur in ways like these:

A young nursery-man, wishing to stock his ground speedily with certain kinds of fruit, sends to an older establishment, at a distance, for specimen trees, and taking for granted their correctness, begins forthwith to bud and engraft his seedlings from them.—Next year, he sells the young trees by the thousand, and the same thing is repeated next year, on a larger scale. But in a few years he begins to receive letters from indignant customers all over the land, complaining of fraud and injustice; he has sent out vile and worthless trash, causing a loss of time and money and patience to his purchasers! Now, where was the dishonesty? There was none: it was simply carelessness in not first *proving* the trees from which he propagated. Yet it was a highly *culpable* carelessness.

Some foreign nursery-men are less conscientious in their business than American dealers. Several years ago, a gentleman in New York, having been frequently imposed upon by a certain French nursery-man, determined to show up his character effectually; and so he invented a list of trees such as no mortal had ever heard of, and ordered them. Forthwith his order was filled under those very names!—What Yankee nursery-man ever did the like of that? We understand that European dealers have lately found out that Americans are not all ignorant savages, and that it is worth their while to treat them so as to retain their large custom.

Some of the so-called "frauds and mistakes of nursery-men" should be charged over to the purchaser. Some men order trees without knowing much about them, and then are disappointed because they don't realize their expectations. Others suffer their young trees to be browsed off by cattle, or to be otherwise broken down, so that the stock grows up instead of the graft. Others, again, give their trees such poor

soil and tillage that the result is almost a total failure.

Then, the tree-peddlers, before mentioned, must take a share of the blame. Many of them are honest and worthy men, but not all. These last, with an eye to a fine speculation, gather up the catalogues of respectable nursery-men, and a lot of highly colored pictures of fruits and flowers, and go about the country, representing themselves as the agents of these establishments, or even partners in the business, and, by much fair speech and many large promises, effect great sales. But it generally turns out that the trees they furnish are only the refuse stock of various unknown nurseries, bought for a song, and sold at full or even higher prices; and it often proves that they are untrue to their names, if not mere wildlings. Such peddlers seldom travel twice in the same track; it would be hardly safe for them to do so. Yet, the country is full of just such men; and it becomes prudent people to look out for them. We must be allowed to say here, that the persons who get most sadly imposed upon in this way, are, generally, those who do not patronize well-established nurseries near home. The pictures, the showy catalogues, the distant nursery and brazen assurance of the peddler, are too much for them. The only safe way is to let these itinerants alone, unless they can give satisfactory evidence of honesty.

Meanwhile, it becomes nursery-men to exercise increasing care in all the details of their business, so that fewer mistakes shall occur. For every mistake is likely to make an enemy of the customer, and to injure the reputation of the nursery, wherever it is known.

For the Farmer and Planter.

THE VINTAGE OF 1858.—REMARKABLE REPRODUCTION OF THE SCUPPERNONG, &c., AFTER FROST.

This year we have had, as late as the 27th of April, a destructive frost, that killed all the young shoots—many of them already two and three feet long, well furnished with numerous bunches of grapes, in their embryo condition, just before blooming. Most fruit-trees were equally affected, though the peach and apple trees escaped. In perfect despair, I had lost all hope of any vintage, or of any wine, and that was the case with all the great varieties I have in my extensive collection, except the Scuppernong. Notwithstanding the shoots of these vines were cut down as much as the other American and European varieties, and the whole vineyard that, on the 26th of April, looked luxuriant with youth, vigor, life, and of a most admirable green, was, before the month expired, parched up as if a fire had burnt all the leaves, and all the young wood, and left the apparently dry and Wintery-looking branches. What could be done for such a disaster? Nothing. It was a calamity, but it was to be borne patiently. They all put out again new branches, and I only hoped for new wood, for my next year's fruit-buds, having lost all hope for the present season, as to fruit. But Providence was kinder than I expected; my Scuppernong made a

new effort at making fruit, and succeeded, to my perfect astonishment; and many yielded a fine crop, while others produced more than half a crop, and all produced some. This important fact I wish especially to record, with all the minuteness it deserves, for this wonderful vitality and power of producing a crop, after such a disaster among vines, is an unheard-of power, and, we may say, entirely peculiar to this American vine. It alone recommends itself as a safe staple plant, and one that we may surely depend on for fruit and for wine. I must add, that this destructive frost has not been general, but in spots; and few have escaped in this upper country, owing to peculiar local causes.

I have just finished gathering and washing my Scuppernong, by means of my peculiar cleaning machine, and the juice is already in a fine state of fermentation. The flavor that arises from the fermenting grapes is a delicious bouquet, with an exquisite fragrance; it is vivifying to smell it; it exhilarates into life and happy spirits; it invigorates the body and cheers the mind; it continues to affect me even now, though twenty-four hours have elapsed since I left my cellar. Send all your splenetic fellows to take a smell of it, and insure for themselves a cure by it, especially if they drink some of my wine instead of vile whisky.

The wine of the comet of 1811, has been long praised—so named because a comet was present on the horizon. Several comets are visible this vintage, and we will have to call it “the wine of three comets.” I can assure you that the late long dry spell in Summer, will do more towards improving the quality of this year's wine, than the presence of half a dozen comets. I do not believe in such effects; still, the wine, this year, will be excellent; but no thanks to the comets or to the frost. We must look for better things next year, as far as quantity is concerned.—I wish some of your up-country friends would give a good trial to the Scuppernong, and see what they will do in your locality and region of altitude.

October 25th, 1858.

*J. TOGNO.

SECOND CROP RASPBERRIES.—The subject of raising from seed new varieties of fruit, that are adapted to our soil and climate, does not receive that attention which its importance requires: and the supply of choice fruits in the market, when compared with the demand, is rather diminishing as the old varieties degenerate. Mr. Wm. Parry, of New Jersey, produced a fine crop of the Cushing Raspberry, twice bearing, the latter part of June, which sold at seventy-five cents per quart in the Philadelphia market, at that time, and bore again profusely the latter part of October, sales being made in the same market on the 27th, at \$1.25 per quart. This variety was raised from seed by Dr. Brinckle, of Philadelphia, who originated the Orange, the Col. Wilder, Vice-President French, and other choice home varieties of the Raspberry, that succeed so well.

For the Farmer and Planter.

THE GRAPE CULTURE.

"The globe itself, as well as the science of its inhabitants, has been explored according to the law which forbids a sudden and rapid leaping forward, and decrees that each successive step, prepared by the last, shall facilitate the next."—*Lord Brougham's Oration on Newton.*

This is also my creed of science and progress, and the result of my own observation and experience.—We are all under the same moral, as well as physical law of progress. But, sir, how is this progressive improvement about the culture of the grape-vine to take place, especially when we see so little interest existing in the masses for its welfare? Instead of fostering its introduction more extensively into our own State, by encouraging the cultivators of it, there is even an evident tendency to depreciate its products; simply because, as yet, in some cases, not equal to the best vintages of the world. That is expecting too much at first; still, I have made *now*, wine, though wanting in age, that can stand comparison with the first class of wines, no matter where produced. My experience goes to prove that all we need is, a little time, perseverance, careful observation, and the publicity of the interesting facts connected with this important branch of horticulture.

We observe, at all the exhibitions in this State, that there is a great desire to make *a beverage they call wine*, or would-be wine, out, with, and from anything except the legitimate substance—the pure juice of the ripe grape, properly cultivated. This is a bad way to induce real drinkers of good wines to encourage the produce of the grape. They laugh at all such attempts, and turn up their noses at it, with good reason. They may well do it to most of these imitations: they justly deserve their ridicule. They correctly call all such imitations of pure wine *poor stuff*. But, unfortunately, their condemnation blindly includes all native wines, though they be made from the pure juice of the grape. I say, let me have a connoisseur, and I will not fear to let him taste and judge of my wine, I care not whence he come. I am so sure of its high character, that I sent some to the Minister of Agriculture of France, and I need not fear the result. Ere long the Scuppernong will be cultivated in France and in Algeria, while our people go to sleep over it. "Let the dead bury their dead." Still, sir, I must make an honorable exception.

The author of the "Notes on Wine and Vine Culture in France," has had the kindness to send me said "Notes," which I had already read with great pleasure, in *Russell's Magazine*, (and which were more appropriate for your publication,) but now gathered in a phamplet form. The author deserves

great credit for his devotion to this good cause.—The numerous and well-observed important facts he has here recorded, are of the greatest value to the American *vigneron*. The writer has cast his bread upon the water; it is hardly possible to tell when it will come back and show its great usefulness, and produce the real good it can do. The public generally is much indebted to this gentleman for his generous devotion to this interesting subject.

J. TOGNO.

Montervino, Abbeville C. H., S. C.

HOW POTATO STARCH IS MADE.

The starch used in families for stiffening shirt-collars and the like, is not made of potatoes, but of wheat, usually. Potato starch is used in cotton-factories, chiefly, for what is called sizing. The starch mill here is a low, cheap building, on a stream of water which carries the machinery. Mr. B. H. Plaisted is the owner. As you enter, he will show you great heaps of potatoes, rough and dirty, as they were dug. His cellar holds six thousand bushels of them now. The California potato is a good deal raised—a very large, coarse potato, which yields a great crop, not very good for human food. As the farmers sell them for only twenty cents per bushel, they must get a good many from an acre, to pay for their labor. One man raised 1280 bushels this year from four acres, of the kind called Peach-blows. The potatoes are first put into a long box, into which water is constantly pouring, and are there stirred about with long wooden fingers, and thus washed. Then they go into another place where there is a huge grater, like a nutmeg-grater, only *greater* by a good deal, and thus they are grated into a pulp. This pulp is carried along over five strainers, upon which streams of water are falling, and thus the starch is washed out, and goes through the strainers, while the skins and coarser parts pass along. The starch seems to be all there is in potatoes of any value, for what is left is thrown into the river, and is thought here to be of very little use for cows, to which it is sometimes given. Next, the starch and water that went through the strainers, are pumped into large vats or boxes, and there, in a short time, the starch falls to the bottom, and the water is taken off the top by a syphon, and the starch, clean and white, is so solid that it can be shoveled up into heaps. Lastly, it is put on to wooden frames, in a hot room, heated with stoves and funnels, and there dried, and then put into bags and sold. About two hundred and forty bushels of potatoes, of sixty pounds to the bushel, will make a ton of starch, which gives about a pound of starch from seven pounds of potatoes. The best and most mealy potatoes make the most starch, but farmers cannot afford to raise them for this purpose, as they yield a smaller crop than coarser varieties.

If any of the boys or girls want to try the experiment of making starch, it can easily be done at home. Take a half-dozen potatoes and grate them to a pulp. Lay the pulp on a coarse sieve, and pour cold water upon it, and allow that which washes through to stand a few hours, and the starch will be at the bottom, fit for use.—H. F. FRENCH, in *N. E. Farmer*.

When you feel inclined to deride the infirmities of others, consider your own failings.

Domestic Economy, Recipes, &c.

CURE FOR COUGH OR HOARSENESS.—Chip up fat lightwood and put a handful of the chips into a pint of common spirits. A teaspoonful in a wine-glass of water, on going to bed, will cure a hoarseness; and if taken three times a day, or whenever a cough is troublesome, it will effect a speedy cure. A few chips thrown into a hot shovel, and the order breathed, will be found serviceable, in lung complaints, and is calculated to relieve asthma. This is much cheaper than "Cherry Pectorals," and equally efficacious.

ALMOND TEA-CAKE.—Two cups of sugar, two-thirds of a cup of butter, three eggs, half a cup of sweet milk, one teaspoonful cream of tartar, half a teaspoonful of soda, and one teaspoonful of extract of almonds.

COOKIES.—One cupful of butter, two cupsful of sugar, four eggs, two tablespoonsful of sour milk, and one teaspoonful of saleratus, dissolved in the milk. Do not work them stiff, only so as to roll.—Bake in a moderate oven. When half done, strew them with grated loaf sugar.

PICKLED EGGS.—Boil the eggs until very hard; when cold, shell them, and cut them in halves, lengthways. Lay them carefully in large-mouthed jars, and pour over them scalding vinegar, well seasoned with whole pepper, allspice, a few pieces of ginger, and a few cloves of garlic. When cold, tie up closely, and let them stand a month. They are then fit for use. With cold meat, they are a most delicious and delicate pickle.

LOWELL BROWN BREAD (*Capital*).—Three teacupsful of Indian meal, two teacupsful of rye, one-half a teacupful of molasses, one teaspoonful of salt, and one teaspoonful of saleratus. Mix in one quart of new milk. Bake two hours.

BAKED INDIAN PUDDING.—Take three pints of new milk, and scald half of it. Stir in meal until quite thick; then add the remainder of the milk.—Beat four eggs, and stir into the batter. Spice and sweeten to taste, and bake two hours.

DOUGHNUTS WITHOUT YEAST.—One cupful of sugar, two eggs, one cupful of fresh butter, three cupsful of buttermilk, flour enough to form a dough (not too stiff,) and one teaspoonful of saleratus. Bake one hour.

TO REMOVE INK STAINS FROM PRINTED BOOKS, &c.—Procure a little oxalic acid, which dissolve in a small quantity of warm water, then slightly wet the stain with it, when it will disappear, leaving the text uninjured.

CRULLERS.—One cupful of sugar, one cupful of milk, half a cupful of butter, two tablespoonsful of cream, (if not too thick and rich—if rich, one tablespoonful is sufficient,) two beaten eggs, and one teaspoonful of saleratus. Work well, but not stiff—only so as to roll. Fry fast.

CEMENT.—For a good fire and water-proof cement, take equal parts, say half a gill each, of sweet milk and good vinegar, add the white of a couple of eggs and stir in finely-powdered quick lime until it is of the proper consistence. Apply immediately, and let it harden well before using. "With this," says a correspondent, "I tinkered up an old kettle, so well, that it served me a year for making soap, sugar, and for the weekly washings, though it was so badly cracked that it had been sold for scrap iron."

CREAM BISCUIT.—Four teacupsful of cream, one teaspoonful of saleratus, dissolved in a cupful of milk. Both milk and cream should be sweet, or both sour. Add one egg, if you choose. Mix soft as you can, and not mold it much. Bake in a quick oven.

FLOATING ISLAND.—Break the yolk of six eggs with one cup of sugar. Boil one quart of milk; stir the sugar and eggs into the milk—stirring till it thickens; pour into a deep dish, and flavor with extract of cloves, lemon, or vanilla. Beat the whites of the eggs to a stiff froth and drop in large spoonfuls with a wet spoon over the custard.


TO CLEAN MARBLE.—Take two ounces of common soda, one of pumice stone, and one of finely powdered chalk; sift them through a fine sieve, and mix them with water; then rub the mixture well all over the marble, and the stains will be removed; now wash the marble over with soap and water, and it will be as clean as it was previous to its being stained. Sometimes the marble is stained yellow with iron rust; this can be removed with lemon-juice.

BROWN BREAD WITHOUT YEAST.—One quart of Indian meal, one pint of white or brown flour, one teaspoonful of salt, one half a cupful of molasses, and one teaspoonful of soda, dissolved in hot water, stirred into one quart of sour milk, warmed.—Beat all together into a batter, and bake slowly two hours.

INDIAN MEAL PUFFS.—Into one quart of boiling milk stir eight tablespoonsful of meal, and four spoonsful of sugar. Boil five minutes, stirring constantly. When cool, add six well-beaten eggs.—Bake in buttered cups half an hour. Try them with a little butter and maple molasses, and see if they are not good.

TO CURE WARTS.—Warts on the hand may be cured by washing them several times a day in strong soda water, and allowing them to dry without wiping. So says a correspondent, and he is correct.

GINGER NUTS.—Ten cupsful of flour, three cupsful of molasses, one cupful of melted butter or pork gravy, (it is good half and half,) one cupful of sour cream, two tablespoonsful of saleratus, dissolved in half a cupful of warm water, and one tablespoonful of ginger. Make soft as can be rolled, and bake quick. This keeps well.

 A lump of wet saleratus, applied to the sting of a wasp or bee, will stop the pain in one moment, and prevent it from swelling.